NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

DMS-DR-2245
NASA CR-147,618
VOLUME 1 OF 2

RESULTS OF AN INVESTIGATION TO DETERMINE LOCAL FLOW CHARACTERISTICS AT THE AIR DATA PROBE LOCATIONS USING AN 0.030-SCALE MODEL (45-0) OF THE SPACE SHUTTLE VEHICLE ORBITER CONFIGURATION 140A/B (MODIFIED) IN THE NASA AMES RESEARCH CENTER UNITARY PLAN WIND TUNNEL (OA161, A, B, C)

SPACE SHUTTLE

AERCTHERMODYNAMIC DATA REPORT

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JOHNSON SPACE CENTER

HOUSTON, TEXAS

DATA MANagement services

SPACE DIVISION CHRYSLER CORPORATION

September 1976

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by

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Prepared under NASA Contract Number NAS9-13247

by

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Chrysler Corporation Space Division
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Houston, Texas

WIND TUNNEL TEST SPECIFICS:

Test Number:	11-094, 97-094, 87-094
NASA Series Number:	OA161 A,B,C
Model Number	45-0
Test Dates:	March 6 through March 31, 1975
Occupancy Hours:	212

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RESULTS OF AN INVESTIGATION TO DETERMINE LOCAL FLOW CHARACTERISTICS AT THE AIR DATA PROBE LOCATIONS USING AN 0.030-SCALE MODEL (45-0) OF THE SPACE SHUTTLE VEHICLE ORBITER CONFIGURATION 140/B (MODIFIED) IN THE NASA AMES RESEARCH CENTER UNITARY PLAN WIND TUNNEL (OA161, A, B, C)

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M. E. Nichols, Rockwell International Space Division

ABSTRACT

This report documents the results of wind tunnel test OA161 of a 0.030-scale model 45-0 of the Configuration 140A/B (Modified) Space Shuttle Vehicle Orbiter in the NASA Ames Research Center Unitary Plan Wind Tunnel facilities, conducted March 6, 1975 to March 31, 1975.

The purpose of this test was to determine local total and static pressure environments for the air data probe locations and relative effectiveness of alternate flight-test probe configurations. Testing was done in the Mach number range from 0.30 to 3.5. Angle of attack was varied from -8 to 25 degrees while sideslip varied between -8 and 8 degrees.

This report contains one volume of plotted data figures and a second volume of tabulated data.

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NOMENCLATURE
General

SYMBOL	PLOT SYMBOL	DEFINITION
a		speed of sound; m/sec, ft/sec
C_p	CP	pressure coefficient; $(p_l - p_\infty)/q$
M	MACH	Mach number; V/a
p		pressure; N/m^2, psf
q	Q(NSM) Q(PSF)	dynamic pressure; $1/2\rho V^2$, N/m^2, psf
RN/L	RN/L	unit Reynolds number; per m, per ft
V		velocity; m/sec, ft/sec
α	ALPHA	angle of attack, degrees
β	BETA	angle of sideslip, degrees
ψ	PSI	angle of yaw, degrees
ϕ	PHI	angle of roll, degrees
ρ		mass density; kg/m^3, $slugs/ft^3$
		Reference & C.G. Definitions
A_b		base area; m^2, ft^2
b	BREF	wing span or reference span; m, ft
c.g.		center of gravity
ℓ_{REF} $\bar{c}$	LREF	reference length or wing mean aerodynamic chord; m, ft
S	SREF	wing area or reference area; m^2, ft^2
	MRP	moment reference point
	XMRP	moment reference point on X axis
	YMRP	moment reference point on Y axis
	ZMRP	moment reference point on Z axis

SUBSCRIPTS

b	base
l	local
s	static conditions
t	total conditions
∞	free stream

NOMENCLATURE (Continued)

Body-Axis System

SYMBOL	PLOT SYMBOL	DEFINITION
C_N	CN	normal-force coefficient; $\frac{\text{normal force}}{qS}$
C_A	CA	axial-force coefficient; $\frac{\text{axial force}}{qS}$
C_Y	CY	side-force coefficient; $\frac{\text{side force}}{qS}$
C_{A_b}	CAB	base-force coefficient; $\frac{\text{base force}}{qS}$ $-A_b(p_b - p_\infty)/qS$
C_{A_f}	CAF	forebody axial force coefficient, $C_A - C_{A_b}$
C_m	CLM	pitching-moment coefficient; $\frac{\text{pitching moment}}{qS\ell_{REF}}$
C_n	CYN	yawing-moment coefficient; $\frac{\text{yawing moment}}{qSb}$
C_ℓ	CBL	rolling-moment coefficient; $\frac{\text{rolling moment}}{qSb}$
		Stability-Axis System
C_L	CL	lift coefficient; $\frac{\text{lift}}{qS}$
C_D	CD	drag coefficient; $\frac{\text{drag}}{qS}$
C_{D_b}	CDB	base-drag coefficient; $\frac{\text{base drag}}{qS}$
C_{D_f}	CDF	forebody drag coefficient; $C_D - C_{D_b}$
C_Y	CY	side-force coefficient; $\frac{\text{side force}}{qS}$
C_m	CLM	pitching-moment coefficient; $\frac{\text{pitching moment}}{qS\ell_{REF}}$
C_n	CLN	yawing-moment coefficient; $\frac{\text{yawing moment}}{qSb}$
C_ℓ	CSL	rolling-moment coefficient; $\frac{\text{rolling moment}}{qSb}$
L/D	L/D	lift-to-drag ratio; C_L/C_D
L/D_f	L/DF	lift to forebody drag ratio; C_L/C_{D_f}

NOMENCLATURE
Additions to Standard List

Symbol	Plot Symbol	Definition
C_{p_i}	CPI	pressure coefficient at tap i
$C_{p_{S_j}}$	CPSJ	static pressure coefficient at tap j, $(P_{S_j} - P_{S_\infty})/q_\infty$
$C_{p_{T_i}}$	CPTI	total pressure coefficient at tap i, $(P_{T_i} - P_{S_\infty})/q_\infty$
M_{i_j}	MIJ	local Mach number obtained using Raleigh-pitot equation with (P_{S_j}/P_{T_i})
P_{S_j}	PSJ	local static pressure at tap j, psfa
P_{S_∞}	P	freestream static pressure, psfa
P_{T_i}	PTI	local total pressure at tap i, psfa
P_{T_∞}	PT	freestream total pressure, psfa
P_{T_i}/P_{T_∞}	PTI/PT	ratio of local to freestream total pressures at tap i
P_{S_j}/P_{S_∞}	PSJ/P	ratio of local to freestream static pressures at tap j
P_{T_i}/q_C	PTI/QC	ratio of local total pressure increment from freestream static to freestream compressible dynamic pressure, $(P_{T_i} - P_{S_\infty})/q_C$
q_∞	Q	freestream (as measured) dynamic pressure, psfa
q_C	QCOMP	freestream compressible dynamic pressure, psfa

$P_{T_X} - P_{S_\infty}$

where P_{T_X} = PT for $M \leq 1.0$

$$PTX = P_{S_\infty}\left[\frac{6}{5}M^2\right]^{7/2}\left[\frac{6}{7M^2-1}\right]^{5/2} \text{ for } M > 1.0$$

NOMENCLATURE (Continued)

Symbol	Plot Symbol	Definition
q_{ij}	QIJ	local compressible dynamic pressure, $(P_{T_i} - P_{s_j})$, psfa
q_{ij}/q_c	QIJ/QC	ratio of local to freestream compressible dynamic pressure
$(\Delta P_T/q)_{ij}$	DPTQIJ	local to freestream total pressure increment ratioed to local compressible dynamic pressure, $(P_{T_i} - P_{T_\infty})/(P_{T_i} - P_{s_j})$, total pressure decrement
$(\Delta P_s/q)_{ij}$	DPQIJ	local static pressure increment ratioed to local compressible dynamic pressure, $(P_{s_j} - P_{s_\infty})/(P_{T_i} - P_{s_j})$, static pressure decrement
δ_a	AILRON	aileron deflection angle, degrees
δ_e	ELEVON	elevon deflection angle, degrees
δ_F	BDFLAP	bodyflap surface deflection angle, positive deflection trailing edge down, degrees

Note: All calculations for rakes on datasets requiring P_{s_j}; P_{s_j} was taken from a rake off dataset.

SUBSCRIPTS

i	I	local total pressure at the ith tap
j	J	local static pressure at the jth tap

RAKES ON CONFIGURATION

J	Static Pressure Tap Locations	Model Station X_o
1	Fuselage Flush Left Side	8.100
2	Fuselage Flush Right Side	8.100
3	Fuselage Flush Left Side	12.900
4	Fuselage Flush Righ Side	12.900

NOMENCLATURE (Concluded)

RAKES ON CONFIGURATION (Concluded)

I	Total Pressure Tap Locations	Model Station X_o
1	Left Rake Outboard	12.846
2	Left Rake Middle	12.873
3	Left Rake Inboard	12.900
4	Right Rake Inboard	12.900
5	Right Rake Middle	12.873
6	Right Rake Outboard	12.846

PROBES ON CONFIGURATION

J	Static Pressure Locations	Model Station X_o
1 ⇒ 4	Same as the rakes on Configuration	
5	Nose Pitot/Static Probe	0.809
6	Left Wing Pitot/Static Probe	35.025

I	Total Pressure Tap Locations	
6	Left Wing Pitot/Static Probe	35.025
7	Nose Pitot/Static Probe	0.809

Note: Left wing pitot/static probe was located along W L 9.160 and B L 14.050

CONFIGURATIONS INVESTIGATED

The 0.030-scale 45-0 model employed in this test was a representation of the Configuration 140A/B (modified) Space Shuttle Vehicle Orbiter. It was instrumented for measurement of static and total pressures in the region of the proposed Air Data Subsystem probes on the Orbiter forebody, and was provided with alternate nose and left wing-tip flight test probe installations. A wing-off configuration was also tested with and without the total-pressure forebody rakes at transonic conditions. During certain runs, tufts were attached on the right-hand forebody region for flow-visualization studies. Elevon and aileron deflections were variable, while the rudder and speedbrake were maintained at 0 deg. settings and the body-flap at -7.17 deg. See Table II.

Model nomenclature used for this test was as follows:

where: Orb = B_{26} C_9 E_{43} F_8 M_{16} N_{24} R_5 V_8 W_{116} N_{28}

Component

B_{26}	Orbiter fuselage per Rockwell International lines: VL70000140A/B (model drawing SS-A01360)
C_9	Orbiter canopy per Rockwell International lines: VL70000140A/B (model drawing SS-A01360)
E_{43}	Orbiter full-span, unswept-hingeline 6"-gapped elevons per Rockwell International lines: VL70-000200 (model drawings SS-A1360)
F_8	Orbiter body flap per Rockwell International lines: VL70000200 (model drawing SS-A1360)
M_{16}	Orbiter OMS pods per Rockwell International lines: VL700002030A, VL70-008401 (model drawing SS-A1360)
N_{24}	Orbiter main propulsion system (MPS) nozzles: VL70000140A, VL70-005034 (model drawing SS-A01360)

CONFIGURATIONS INVESTIGATED (Concluded)

N_{28} Orbiter OMS nozzles: VL70-000140A (model drawing SS-A01360)

R_5 Orbiter rudder per Rockwell International lines: VL70000146A (model drawing SS-A01360)

V_8 Orbiter vertical tail per Rockwell lines: VL70-000146A (model drawing SS-A01360)

W_{116} Orbiter wing per Rockwell International lines: VL70-000200 (model drawing SS-A01360)

See Table III for detailed information on model components.

TEST FACILITY DESCRIPTION

The Ames 11 x 11-Foot Transonic Wind Tunnel is a variable density, closed return, continuous flow type. This tunnel has an adjustable nozzle (two flexible walls) and a slotted test section to permit transonic testing over a Mach number range continuously variable from 0.4 to 1.4.

The Ames 8 x 7-Foot Supersonic Wind Tunnel is a closed-return, variable-density tunnel with a 8- by 7-foot rectangular test section. The nozzle has flexible side walls with fixed upper and lower surfaces. Mach number range is continuously variable from 2.45 to 3.5. Tunnel stagnation pressure can be varied from 0.3 to 2.0 atmospheres and Reynolds number per foot varies from 1.0×10^6 to 5.0×10^6.

The Ames 9 x 7-Foot Supersonic Wind Tunnel is a variable density, continuous flow type with an adjustable nozzle to permit supersonic testing over a Mach number range continuously variable from 1.5 to 2.5. The nozzle is of the asymmetric, sliding-block type in which the variation of the test section Mach number is achieved by translating, in the streamwise direction, the fixed-contour block that forms the floor of the nozzle.

DATA REDUCTION

Six-component balance data were reduced, using Ames standard data reduction techniques, to body-axis coefficient form. Angles of attack and sideslip were corrected for balance and sting deflections. Moments were reduced about the Orbiter moment reference center.

No base pressure corrections were applied to the data; however, two base pressure taps were monitored for future reference. Tufts and Schlieren photography were employed to determine local flow and shock-wave patterns, particularly in the transonic regime.

The following reference dimensions and constants were used to reduce the data to coefficient form.

Reference Dimensions and Constants

Symbol	Definition	Model Scale	Full Scale
S	Wing reference area, ft^2	2.421	2690.0
$\bar{c}$	Wing reference MAC, in	14.244	474.8
b	Wing reference span, in	28.100	936.68
MRP	Moment reference point		
	Fuselage station	32.300	1076.68
	Water plane	11.250	375

Probe data were reduced to provide local Mach number, various pressure ratios, and coefficients as defined in the nomenclature section. Mach numbers (M_{ij}) were calculated using the Raleigh Pitot equation with the appropriate static (P_{S_j}) and total (P_{T_i}) pressures. Calculations for data sets containing data obtained with the rake installed utilize P_{S_j} from an equivalent data set containing data obtained without the rake installed.

DISCUSSION OF DATA AND RESULTS

Force data were good in nearly all cases. A roll gauge failure between test segments B and C required recalibration measures in the reduction program, but no data were lost. Axial force data were possibly the least accurate during this test due to the interaction effects of the metric-to-nonmetric instrumentation leads running from the model to the supporting sting. However, axial-force corrections to the model angle-of-attack and/or angle-of-sideslip readings were considered insignificant.

Model fidelity to configuration lines was questioned as a result of asymmetrical pressure data in 0° sideslip cases with symmetrical deflection settings. Model dimensional checks will be carried out as necessary to determine compensations to test data.

REFERENCE

SD75-SH-0052, "Pretest Information for Test OA161 A, B and C of the 0.030-Scale Model 45-O Space Shuttle Orbiter in the Ames Research Center Unitary Plan Wind Tunnels for Determining Local Flow Characteristics at the Air Data Probe Location", By D. E. Thornton and M. E. Nichols, February 14, 1975.

TABLE I

TEST : 0A161 A,B, C

DATE : March, 1975

TEST CONDITIONS

MACH NUMBER	REYNOLDS NUMBER (per unit length)	DYNAMIC PRESSURE (pounds/sq. inch)	STAGNATION TEMPERATURE (degrees Fahrenheit)
0.30	4.25 x 10^6/ft	1.69	116
0.60	↓	3.57	↓
0.70	↓	3.94	↓
0.80	↓	4.44	↓
0.85	↓	4.76	↓
0.90	↓	4.90	↓
0.95	↓	5.04	↓
0.98	↓	5.22	↓
1.05	↓	5.45	↓
1.10	↓	5.55	↓
1.15	↓	5.66	↓
1.20	↓	5.68	↓
1.30	↓	5.93	↓
1.40	↓	6.10	↓
1.55	3.00 x 10^6/ft	4.47	85
1.75	↓	4.62	↓

BALANCE UTILIZED: MK XX 2.5"

	CAPACITY:	ACCURACY:	COEFFICIENT TOLERANCE:
NF	3000 lbs		
SF	1500 lbs		
AF	600 lbs		
PM	27,000 in-lbs		
RM	4000 in-lbs		
YM	10,500 in-lbs		

COMMENTS:

TABLE I. (Conl'd)

TEST : 0A161 A,B,C

DATE : March, 1975

TEST CONDITIONS

MACH NUMBER	REYNOLDS NUMBER (per unit length)	DYNAMIC PRESSURE (pounds/sq. inch)	STAGNATION TEMPERATURE (degrees Fahrenheit)
2.00	3.00 x 10^6/ft	4.52	85
2.25	↓	4.13	↓
2.50	2.00 x 10^6/ft	1.95	102
3.00	↓	2.21	↓
3.50	↓	1.98	↓

BALANCE UTILIZED: _____

	CAPACITY:	ACCURACY:	COEFFICIENT TOLERANCE:
NF	_____	_____	_____
SF	_____	_____	_____
AF	_____	_____	_____
PM	_____	_____	_____
RM	_____	_____	_____
YM	_____	_____	_____

COMMENTS:

TABLE II.

TEST: OA161 A,B,C

DATA SET/RUN NUMBER COLLATION SUMMARY

DATE: POST TEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δ_E	δ_A	δ_{BC}	NO. OF RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 0.3	0.56	0.6	0.7	0.8	0.85	0.9	0.95	0.98	1.05	TEST RUN NUMBERS
RE7001	ORBITER-WING+RAKES	A	0	-	-	-6.5				2	3	4		5		6		
02	ORBITER-WING	N/C*	0	-	-	-6.5				282						283		
03	ORBITER + RAKES	C/B*	-5	0	0	-6.5												
04		C	-2															
05		C/B*	0							21*				18*				
06		C/B*	2							22*				19*				
07		C/B*	5							23*				20*				
08	ORBITER + TUFTS	F	-5	0	0	-6.5				99		100	110	111	120	121	130	
09		E	-2							98		101	109	112	119	122	129	
10		G	0							97		102	108	113	118	123	128	
11		F	2							96		103	107	114	117	124	127	
12		F	5							95		104	106	115	116	125	126	
13	ORBITER	C	-5	0	0	-6.5				29	34	43	44	54	55	64	65	
14		C	-2							30	35	42	45	53	56	63	66	
15		C	0							31	36	41	46	52	57	62	67	
16		C/D*	2							32*	37	40	47	50	58	61	68	
17		C	5							28	38	39	48	49	59	60	69	

1 7 13 19 25 31 37 43 49 55 61 67 75 76

R BETA, CL, CD, CLM, CN, CA, CY, CYN, CBL, L/D, MACH, ALPHA, 1.0

IDVAR (1) IDVAR (2) NDV

DATA SETS

α OR β SCHEDULES

COEFFICENTS

α) A = 0, 4, 8, 12, 16, 20, 24

α) B = 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 0

α) C = 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 25, 0

α) D = 0, 2, 4

α) F = 0, 4, 8, 10, 12, 14, 16, 20

α) G = 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 25

α) N = 0, 4, 8, 12, 16, 20, 24, 0

TABLE II.- Continued

TEST: OA161 A, B, C — DATA SET/RUN NUMBER COLLATION SUMMARY — DATE: POST-TEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δ_E	δ_A	δ_{BF}	NO. OF RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 1.1	1.15	1.2	1.3	1.4	1.55	1.75	2.0	2.25	2.5	TEST RUN NUMBERS
RE7001	ORBITER-WING+RAKES	A	0	-	-	-6.5		7		8	9	10						
02	ORBITER-WING	N/C*	0	-	-	-6.5		284		285*								
03	ORBITER + RAKES	C/B*	-5	0	0	-6.5				17*			305	306	315	316	441	
04		C	-2										304	307	314	317	442	
05		C/B*	0							16*		12*	303	308	313	318	443	
06		C/B*	2							15*		13*	302	309	312	319	444	
07		C/B*	5							14		11	301	310	311	320	445	
08	ORBITER + TUFTS	F	-5	0	0	-6.5		131	138	141	150	151						
09		F	-2					132	137	142	149	152						
10		G	0					133	136	143	148	153						
11		F	2					139	134	144	147	154						
12		F	5					140	135	145*	146	155						
13	ORBITER	C	-5	0	0	-6.5		74	75	84	85	94	321	330	331	349	416	
14		C	-2					73	76	83	86	93	322	329	332	348	417	
15		C	0					72	77	82	87	92	323	328	333	347	418	
16		C/D*	2					71	78	81	88	91	324	327	334	346	419	
17		C	5					70	79	80	89	90	325	326	335	345	420	

1 7 13 19 25 31 37 43 49 55 61 67 75 76

A DATA SETS: BETA, PT, P, PS1/P, PS2/P, PS3/P, PS4/P, PS5/P, PS6/P, PS7/P, MACH, ALPHA, 1.0

α OR β SCHEDULES — COEFFICENTS — IDVAR (1) — IDVAR (2) — NDV

α) A = 0, 4, 8, 12, 16, 20, 24

α) B = 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 0

α) C = 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 25, 0

α) D = 0, 2, 4

α) F = 0, 4, 8, 10, 12, 14, 16, 20

α) G = 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 25

α) N = 0, 4, 8, 12, 16, 20, 24, 0

TABLE II. - Continued

TEST: OA161 A, B, C

DATA SET/RUN NUMBER COLLATION SUMMARY

DATE: POST TEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δE	δA	δBF	NO. OF RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 3.0	3.5	TEST RUN NUMBERS
RE7001	ORBITER-WING+RAKES	A	0	-	-	-6.5				
02	ORBITER-WING	W/C*	0	-	-	-6.5				
03	ORBITER+RAKES	C/B*	-5	0	0	-6.5		440	431	
04	↓	C	-2	↓	↓	↓		439	432	
05		C/B*	0					438	433	
02		C/B*	2					437	434	
07	↓	C/B*	5	↓	↓	↓		436	435	
08	ORBITER+TUFTS	F	-5	0	0	-6.5				
09	↓	F	-2	↓	↓	↓				
10		G	0							
11		F	2							
12	↓	F	5	↓	↓	↓				
13	ORBITER	C	-5	0	0	-6.5		425	426	
14	↓	C	-2	↓	↓	↓		424	427	
15		C	0					423	428	
16		C/B*	2					422	429	
17	↓	C	5	↓	↓	↓		421	430	

1 7 13 19 25 31 37 43 49 55 61 67 75 76

B BETA, PT, Q(PSF), PT1/PT2/PT3/PT4/PT5/PT6/PT7/PT MACH, ALPHA, 1.0

IDVAR (1) IDVAR (2) NDV

B DATA SETS

α OR β SCHEDULES

COEFFICENTS

α) A = 0, 4, 8, 12, 16, 20, 24

α) B = 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 0

α) C = 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 25, 0

α) D = 0, 2, 4

α) F = 0, 4, 8, 10, 12, 14, 16, 20

α) G = 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 25

α) N = 0, 4, 8, 12, 16, 20, 24, 0

TABLE II. - Continued

TEST: OA161 A, B, C | DATA SET/RUN NUMBER COLLATION SUMMARY | DATE: POST TEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	δ_E	δ_A	δ_{BF}	NO. OF RUNS	MACH 0.3	MACH 0.56	MACH 0.6	MACH 0.7	MACH 0.8	MACH 0.85	MACH 0.9	MACH 0.95	MACH 0.98	MACH 1.05	TEST RUN NUMBERS
RE7018	ORBITER	H_{K^*}	-5	0	2.5	-6.5				160				161				
19		H_{I^*}	-2							159				162				
20		H_{J^*}	0							158				163				
21		H_{I^*}	2							157				164				
22		H_{I^*}	5							156				165				
23		I_{M^*}	-5	0	5	-6.5				201				200*		191		
24		I_{M^*}	-2							202				199*		192		
25		J_{L^*}	0							203				198		193*		
26		I_{M^*}	2							204*				197*		194		
27		I_{M^*}	5							205*				196*		195		
28		I_{M^*}	-5	0	7.5	-6.5				210				211*				
29		I_{M^*}	-2							209				212*				
30		J	0							208				213				
31		I_{M^*}	2							207				214*				
32		I_{M^*}	5							206*				215*				

1 7 13 19 25 31 37 43 49 55 61 67 75 76

α OR β SCHEDULES — COEFFICENTS

α) H = 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 25

α) I = 0, 4, 8, 10, 12, 14, 16, 20, 0

α) J = 0, 4, 6, 8, 10, 12, 14, 16, 20, 24, 0

IDVAR (1) IDVAR (2) NDV

α) K = 0, 2, 4, 8, 10, 12, 14, 16, 20, 0

α) L = 0, 2, 4, 6, 8, 10, 12, 14, 16, 20, 24, 0

α) M = 0, 4, 6, 8, 10, 12, 14, 16, 20, 0

TABLE II. - Continued

TEST: CA161 A, B, C

DATA SET/RUN NUMBER COLLATION SUMMARY

DATE: POST TEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δ_E	δ_A	δ_{BF}	NO. OF RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 1.1	1.15	1.2	1.3	1.4	1.55	1.75	2.0	2.25	2.5	TEST RUN NUMBERS
REF 018	ORBITER	H K* L**	-5	0	2.5	-6.5				170*		171**						
19		H J*	-2							169*		172*						
20		H J*	0							168*		173*						
21		H I*	2							167*		174*						
22		H I*	5							166*		175*						
23		J M**	-5	0	5	-6.5		190		181		180						
24		I M**	-2					189		182		179						
25		J I & L**	0					188*		183		178**						
26		I M*	2					187		184		177						
27		I M*	5					186		185		176						
28		I M**	-5	0	7.5	-6.5				221		220						
29		I M*	-2							222		219						
30		J	0							223		218						
31		I M*	2							224		217						
32		I M*	5							225		216						

1 7 13 19 25 31 37 43 49 55 61 67 75 76

IDVAR (1) IDVAR (2) NDV

α OR β SCHEDULES — COEFFICENTS

α) H = 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 25

α) I = 0, 4, 8, 10, 12, 14, 16, 20, 0

α) J = 0, 4, 6, 8, 10, 12, 14, 16, 20, 24, 0

α) K = 0, 2, 4, 8, 10, 12, 14, 16, 20, 0

α) L = 0, 2, 4, 6, 8, 10, 12, 14, 16, 20, 24, 0

α) M = 0, 4, 6, 8, 10, 12, 14, 16, 20, 0

TABLE II. - Continued

TEST: OA16 A, B, C

DATA SET/RUN NUMBER COLLATION SUMMARY

DATE: POST TEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δE	δA	δBF	NO. OF RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 3.0	3.5	TEST RUN NUMBERS
RE7018	ORBITER	$K^{H}_{I^*}$	-5	0	2.5	-6.5				
19		H/I^*	-2							
20		H/J^*	0							
21		H/I^*	2							
22		H/I^*	5							
23		I/M^*	-5	0	5	-6.5				
24		I/M^*	-2							
25		J/L^*	0							
26		I/M^*	2							
27		I/M^*	5							
28		I/M^*	-5	0	7.5	-6.5				
29		I/M^*	-2							
30		J	0							
31		I/M^*	2							
32		I/M^*	5							

1 7 13 19 25 31 37 43 49 55 61 67 75 76

α OR β SCHEDULES

COEFFICENTS

IDVAR (1) IDVAR (2) NDV

α) H = 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 25

α) I = 0, 4, 8, 10, 12, 14, 16, 20, 0

α) J = 0, 4, 6, 8, 10, 12, 14, 16, 20, 24, 0

α) K = 0, 2, 4, 8, 10, 12, 14, 16, 20, 0

α) L = 0, 2, 4, 6, 8, 10, 12, 14, 16, 20, 24, 0

α) M = 0, 4, 6, 8, 10, 12, 14, 16, 20, 0

TABLE II. - Continued

TEST: OA161A,B,C

DATA SET/RUN NUMBER COLLATION SUMMARY

DATE: POST TEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. PARAMETERS/VALUES α	β	δ_E	δ_A	δ_{BF}	NO. OF RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 0.3	0.56	0.6	0.7	0.8	0.85	0.9	0.95	0.98	1.05	TEST RUN NUMBERS
RE7033	ORBITER	I	-5	0	10	-6.5				252				251		241		
34		I	-2							253				250		242		
35		J	0							254				249		243		
36		I	2							255				247		244		
37		I	5							256				246		245		
38	ORBITER + PROBES	C	-8	0	0	-6.5		263		264								
39		C	-5					262		265								
40		C	-2					261		266								
41		C	0					260		267								
42		C	2					259		271								
43		C	5					258		269								
44		C	8					257		270								
45		C	-5	15	0	-6.5		276		277								
46		C	-2					275		278								
47		C	0					274		279								
48		C	2					273		280								
49		C	5					272		281								

1 7 13 19 25 31 37 43 49 55 61 67 75 76

α OR β SCHEDULES

COEFFICENTS

IDVAR (1) IDVAR (2) NDV

α) C = 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 25, 0

α) I = 0, 4, 8, 10, 12, 14, 16, 20, 0

α) J = 0, 4, 6, 8, 10, 12, 14, 16, 20, 24, 0

TABLE II. - Continued

TEST : OA 161 A, B, C — DATA SET/RUN NUMBER COLLATION SUMMARY — DATE : POST TEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δ_E	PARAMETERS/VALUES δ_A	PARAMETERS/VALUES δ_{BF}	NO. OF RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 1.1	1.15	1.2	1.3	1.4	1.55	1.75	2.0	2.25	2.5	TEST RUN NUMBERS
RE70 33	ORBITER	I	-5	0	10	-6.5		240		231		230						
34		I	-2					239		232		229						
35		J	0					238		233		228						
36		I	2					237		234		227						
37		I	5					236		235		226						
38	ORBITER + PROBES	C	-8	0	0	-6.5												
39		C	-5															
40		C	-2															
41		C	0															
42		C	2															
43		C	5															
44		C	8															
45		C	-5	15	0	-6.5												
46		C	-2															
47		C	0															
48		C	2															
49		C	5															

1 7 13 19 25 31 37 43 49 55 61 67 75 76

α OR β SCHEDULES — COEFFICENTS — IDVAR (1) — IDVAR (2) — NDV

α) C = 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 25, 0

α) I = 0, 4, 8, 10, 12, 14, 16, 20, 0

α) J = 0, 4, 6, 8, 10, 12, 14, 16, 20, 24, 0

TABLE II. - Continued

TEST: OA 161 A, B, C

DATA SET/RUN NUMBER COLLATION SUMMARY

DATE: POST TEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δ_E	δ_A	δ_{BF}	NO. OF RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 3.0	3.5
RE7033	ORBITER	I	-5	0	10	-6.5			
34		I	-2						
35		I	0						
36		I	2						
37	↓	I	5	↓	↓	↓			
38	ORBITER + PROBES	C	-8	0	0	-6.5			
39		C	-5						
40		C	-2						
41		C	0						
42		C	2						
43		C	5						
44		C	8	↓	↓	↓			
45		C	-5	15	0	-6.5			
46		C	-2						
47		C	0						
48		C	2						
49	↓	C	5	↓	↓	↓			

TEST RUN NUMBERS

1 7 13 19 25 31 37 43 49 55 61 67 75 76

IDVAR (1) IDVAR (2) NDV

α OR β SCHEDULES

COEFFICENTS

α) C = 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 25, 0

α) J = 0, 4, 8, 10, 12, 14, 16, 20, 0

α) J = 0, 4, 6, 8, 10, 12, 14, 16, 20, 24, 0

TABLE II. - Continued

TEST: OA161 A,B,C — DATA SET/RUN NUMBER COLLATION SUMMARY — DATE: POST TEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δE	PARAMETERS/VALUES SA	PARAMETERS/VALUES SBF	NO. OF RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 0.3	0.56	0.6	0.7	0.8	0.85	0.9	0.95	0.98	1.05	TEST RUN NUMBERS
RE7050	ORBITER + RAKES	C	-5	0	0	-6.5												
51		C	-2															
52		C	0															
53		C	2															
54		C	5															
55	ORBITER	C/E*	-5	0	0	-6.5			24		33*							
56		C	-2						25									
57		C	0						26									
58		C	2						27									
59		C/H*	5											51				

1 7 13 19 25 31 37 43 49 55 61 67 75 76

α OR β SCHEDULES — COEFFICENTS

α) C = 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 25, 0

α) E = 0, 2, 4, 6, 8, 10, 12

IDVAR (1) IDVAR (2) NDV

α) H = 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 25

TABLE II. - Continued

TEST: OA161 A,B,C

DATA SET/RUN NUMBER COLLATION SUMMARY

DATE: POST TEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δE	δA	δBF	NO. OF RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 1.1	1.15	1.2	1.3	1.4	1.55	1.75	2.0	2.25	2.5	TEST RUN NUMBERS
RE7050	ORBITER+RAKES	C	-5	0	0	-6.5											411	
51		C	-2														412	
52		C	0														413	
53		C	2														414	
54		C	5														415	
55	ORBITER	C	-5	0	0	-6.5							337		340			
56		C	-2										338		341			
57		C	0												342			
58		C	2												343			
59		C/A*	5											339	344	336*		

1 7 13 19 25 31 37 43 49 55 61 67 75 76

IDVAR (1) IDVAR (2) NDV

α OR β SCHEDULES

COEFFICENTS

α) C = 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 25, 0

α) E = 0, 2, 4, 6, 8, 10, 12

α) H = 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 25

TABLE II. - Concluded

TEST: OA161A,B,C

DATA SET/RUN NUMBER COLLATION SUMMARY

DATE: POST TEST

DATA SET IDENTIFIER	CONFIGURATION	SCHD. α	SCHD. β	PARAMETERS/VALUES δ_E	δ_A	δ_{BF}	NO. OF RUNS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE) 3.0	3.5	TEST RUN NUMBERS
RE7050	ORBITER + RAILS	C	-5	0	0	-6.5		410	401	
51		C	-2					409	402	
52		C	0					408	403	
53		C	2					407	404	
54	↓	C	5	↓	↓	↓		406	405	
55	ORBITER	C	-5	0	0	-6.5				
56		C	-2							
57		C	0							
58		C	2							
59	↓	C/H*	5	↓	↓	↓				

1 7 13 19 25 31 37 43 49 55 61 67 75 76

α OR β SCHEDULES

COEFFICENTS

α) C = 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 25, 0

α) E = 0, 2, 4, 6, 8, 10, 12

IDVAR (1) IDVAR (2) NDV

α) H = 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 25

TABLE III MODEL DIMENSIONAL DATA

MODEL COMPONENT : BODY - B_{26}

GENERAL DESCRIPTION : Configuration 140A/B Orbiter fuselage.

NOTE: B_{26} is identical to B_{24} except underside of fuselage has been refaired to accept W_{116}.

MODEL SCALE: 0.030

DRAWING NUMBER : VL70-000143B, -000200, -000205, -006089, -000145, VL70-000140A, -000140B

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length (OML: Fwd. Sta. X_o=235). In.	1293.3	38.799
Length (IML: Fwd. Sta. X_o=238). In.	1290.3	38.709
Max Width (@ X_o = 1528.3). In.	264.0	7.920
Max Depth (@ X_o = 1564). In.	250.00	7.500
Fineness Ratio	0.264	0.264
Area - Ft^2		
Max. Cross-Sectional	340.88	0.3068
Planform		
Wetted		
Base		

TABLE III (Cont'd)

MODEL COMPONENT: CANOPY - C_9

GENERAL DESCRIPTION: Configuration 3A. Canopy used with fuselage B_{26}.

MODEL SCALE: 0.030.

DRAWING NUMBER: VL70-000143A

DIMENSION:	FULL SCALE	MODEL SCALE
Length (X_o - 434.643 to 578) In.	143.357	4.301
Max Width (@ X_o = 513.127), In.	152.412	4.572
Max Depth (@ X_o = 485.0), In.	25.000	0.750
Fineness Ratio		
Area		
Max Cross-Sectional		
Planform		
Wetted		
Base		

TABLE III (Cont'd)

MODEL COMPONENT: SLOTTED ELEVON (6-INCH GAP) - E_{43}

GENERAL DESCRIPTION: Configuration 140A'B Orbiter elevon.

NOTE: E_{43} is a slotted version of E_{26}. Data are for one side.

MODEL SCALE: 0.030

DRAWING NUMBER: VL70-000200 -006089, -006092

DIMENSIONS:	FULL-SCALE	MODEL SCALE
Area - Ft^2	210.00	0.189
Span (equivalent), In.	349.2	10.476
Inb'd equivalent chord, In.	118.004	3.540
Outb'd equivalent chord, In.	55.192	1.656
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	0.2096	0.2096
At Outb'd equiv. chord	0.4004	0.4004
Sweep Back Angles, degrees		
Leading Edge	0.00	0.00
Tailing Edge	-10.056	-10.056
Hingeline	0.00	0.00
Area Moment (Product of Area & $\bar{c}$) (Normal to hingeline), Ft^3	1587.25	0.043
Mean Aerodynamic Chord, In.	90.7	2.721

TABLE III (Cont'd)

MODEL COMPONENT: BODY FLAP - F_8

GENERAL DESCRIPTION: Configuration 140A'B orbiter body flap. Hingeline located at X_o = 1528.3. Z_o = 284.3

MODEL SCALE: 0.030.

DRAWING NUMBER VL70-000140A, -000145

DIMENSION:	FULL SCALE	MODEL SCALE
Length (X_o = 1520 to X_o = 1613). In.	93.00	2.79
Max Width (In.)	262.00	7.86
Max Depth (@ X = 1520). In..	23.00	0.69
Fineness Ratio		
Area - Ft^2		
Max Cross-Sectional		
Planform	150.525	.1355
Wetted		
Base	41.847	.0377

TABLE III (Cont'd)

MODEL COMPONENT: OMS POD - M16

GENERAL DESCRIPTION: Configuration 140C orbiter OMS pod - short pod.

MODEL SCALE: 0.030

DRAWING NUMBER VL70-008401, -008410

DIMENSION:	FULL SCALE	MODEL SCALE
Length (OMS Fwd Sta. X_o = 1310.5), In.	258.50	7.755
Max Width (@ X_o = 1511), In.	136.8	4.104
Max Depth (@ X_o = 1511), In.	74.70	2.241
Fineness Ratio	2.484	2.484
Area - Ft^2		
Max Cross-Sectional	58.864	0.053
Planform		
Wetted		
Base		

TABLE III (Cont'd)

MODEL COMPONENT: MPS NOZZLES - N_{24}

GENERAL DESCRIPTION: Configuration 140A 'B Orbiter MPS Nozzles.

MODEL SCALE: 0.030

DRAWING NUMBER: VL70-005030A, -000140A

DIMENSIONS:	FULL SCALE	MODEL SCALE
MACH NO.		
Length - In.		
Gimbal Point to Exit Plane	157.0	4.71
Throat to Exit Plane	99.2	2.976
Diameter - In.		
Exit	91.00	2.73
Throat		
Inlet		
Area - ft^2		
Exit	45.17	0.0407
Throat		
Gimbal Point (Station) - In.		
Upper Nozzle		
X	1445.	43.35
Y	0	0
Z	443.00	13.29
Lower Nozzles		
X	1468.17	44.045
Y	+ 53.00	+ 1.59
Z	342.64	10.279
Null Position - Deg.		
Upper Nozzle		
Pitch	16	16
Yaw	0	0
Lower Nozzle		
Pitch	10	10
Yaw	3.5	3.5

TABLE III (Cont'd)

MODEL COMPONENT: OMS NOZZLES - N_{28}

GENERAL DESCRIPTION: Configuration 140A 'B Orbiter OMS Nozzles.

MODEL SCALE: 0.030

DRAWING NUMBER: V170-000140A (Location)

DIMENSIONS:	FULL SCALE	MODEL SCALE
MACH NO.		
Length - In.		
Gimbal Point to Exit Plane		
Throat to Exit Plane		
Diameter - In.		
Exit		
Throat		
Inlet		
Area - ft^2		
Exit		
Throat		
Gimbal Point (Station) - In.		
Left ~~Upper~~ Nozzle		
X_o	1518.0	45.54
Y_o	- 88.0	- 2.65
Z_o	492.0	14.76
Right ~~Lower~~ Nozzles		
X_o	1518.0	45.54
Y_o	88.0	2.64
Z_o	492.0	14.76
Null Position - Deg.		
Left ~~Upper~~ Nozzle		
Pitch	$15^o49'$	$15^o49'$
Yaw	$12^o17'$	$12^o17'$
Right ~~Lower~~ Nozzle		
Pitch	$15^o49'$	$15^o49'$
Yaw	$12^o17'$	$12^o17'$

TABLE III (Cont'd)

MODEL COMPONENT: RUDDER - R_5

GENERAL DESCRIPTION: Configuration 140C orbiter rudder (identical to Configuration 140A/B rudder).

MODEL SCALE: 0.030

DRAWING NUMBER: VL70-000146B. --000095

DIMENSIONS:	FULL-SCALE	MODEL SCALE
Area - Ft^2	100.15	0.090
Span (equivalent), In.	201.00	6.030
Inb'd equivalent chord. In.	91.585	2.748
Outb'd equivalent chord . In.	50.833	1.525
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	0.400	0.400
At Outb'd equiv. chord	0.400	0.400
Sweep Back Angles, degrees		
Leading Edge	34.83	34.83
Tailing Edge	26.25	26.25
Hingeline	34.83	34.83
Area Moment (Product of area & $\bar{c}$) Normal to hingeline Ft^3	610.92	0.0165
Mean Aerodynamic Chord, In.	73.2	2.196

TABLE III (Cont'd)

MODEL COMPONENT: VERTICAL - V_8

GENERAL DESCRIPTION: Configuration 140C orbiter vertical tail (Identical to configuration 140A 'B vertical tail).

MODEL SCALE: 0.030

DRAWING NUMBER: VL70-000140C, -000146B

DIMENSIONS:	FULL SCALE	MODEL SCALE
TOTAL DATA		
Area (Theo) - Ft^2		
Planform	413.253	0.372
Span (Theo) - In.	315.72	9.472
Aspect Ratio	1.675	1.675
Rate of Taper	0.507	0.507
Taper Ratio	0.404	0.404
Sweep-Back Angles, Degrees.		
Leading Edge	45.000	45.000
Trailing Edge	26.25	26.25
0.25 Element Line	41.13	41.13
Chords:		
Root (Theo) WP	268.50	8.055
Tip (Theo) WP	108.47	3.254
MAC	199.81	5.994
Fus. Sta. of .25 MAC	1463.35	43.901
W.P. of .25 MAC	635.52	19.066
B.L. of .25 MAC	0.0	0.0
Airfoil Section		
Leading Wedge Angle - Deg.	10.00	10.00
Trailing Wedge Angle - Deg.	14.92	14.92
Leading Edge Radius	3.00	0.060
Void Area	13.17	0.0019
Blanketed Area		

TABLE III (Conl'd)

MODEL COMPONENT: WING-W_{116}

GENERAL DESCRIPTION: Configuration 4

NOTE: Identical to W_{111} except airfoil thickness. Dihedral angle is along trailing edge of wing.

MODEL SCALE: 0.030

TEST NO.

DWG. NO. VL70-000140A, -000200

DIMENSIONS:	FULL-SCALE	MODEL SCALE
TOTAL DATA		
Area (Theo.) Ft^2		
Planform	2690.00	2.421
Span (Theo In.	936.68	28.10
Aspect Ratio	2.265	2.265
Rate of Taper	1.177	1.177
Taper Ratio	0.200	0.200
Dihedral Angle, degrees	3.500	3.500
Incidence Angle, degrees	0.500	0.500
Aerodynamic Twist, degrees	3.000	3.000
Sweep Back Angles, degrees		
Leading Edge	45.000	45.000
Trailing Edge	- 10.056	- 10.056
0.25 Element Line	35.209	35.209
Chords:		
Root (Theo) B.P.0.0.	689.24	20.677
Tip, (Theo) B.P.	137.85	4.136
MAC	474.81	14.244
Fus. Sta. of .25 MAC	1136.83	34.105
W.P. of .25 MAC	290.58	8.717
B.L. of .25 MAC	182.13	5.464
EXPOSED DATA		
Area (Theo) Ft^2	1751.50	1.576
Span, (Theo) In. BP108	720.68	21.620
Aspect Ratio	2.059	2.059
Taper Ratio	0.245	0.245
Chords		
Root BP108	562.09	16.863
Tip 1.00 $\frac{b}{2}$	137.85	4.136
MAC	392.83	11.785
Fus. Sta. of .25 MAC	1185.98	35.579
W.P. of .25 MAC	294.30	8.829
B.L. of .25 MAC	251.77	7.553
Airfoil Section (Rockwell Mod NASA) XXXX-64		
Root $\frac{b}{2}$ =	0.113	0.113
Tip $\frac{b}{2}$ =	0.120	0.120
Data for (1) of (2) Sides		
Leading Edge Cuff Planform Area Ft^2	113.18	[illegible]
Leading Edge Intersects Fus M. L. @ Sta	500.00	15.00
Leading Edge Intersects Wing @ Sta	1024.00	30.72

Notes:

1. Positive directions of force coefficients, moment coefficients, and angles are indicated by arrows
2. For clarity, origins of wind and stability axes have been displaced from the center of gravity

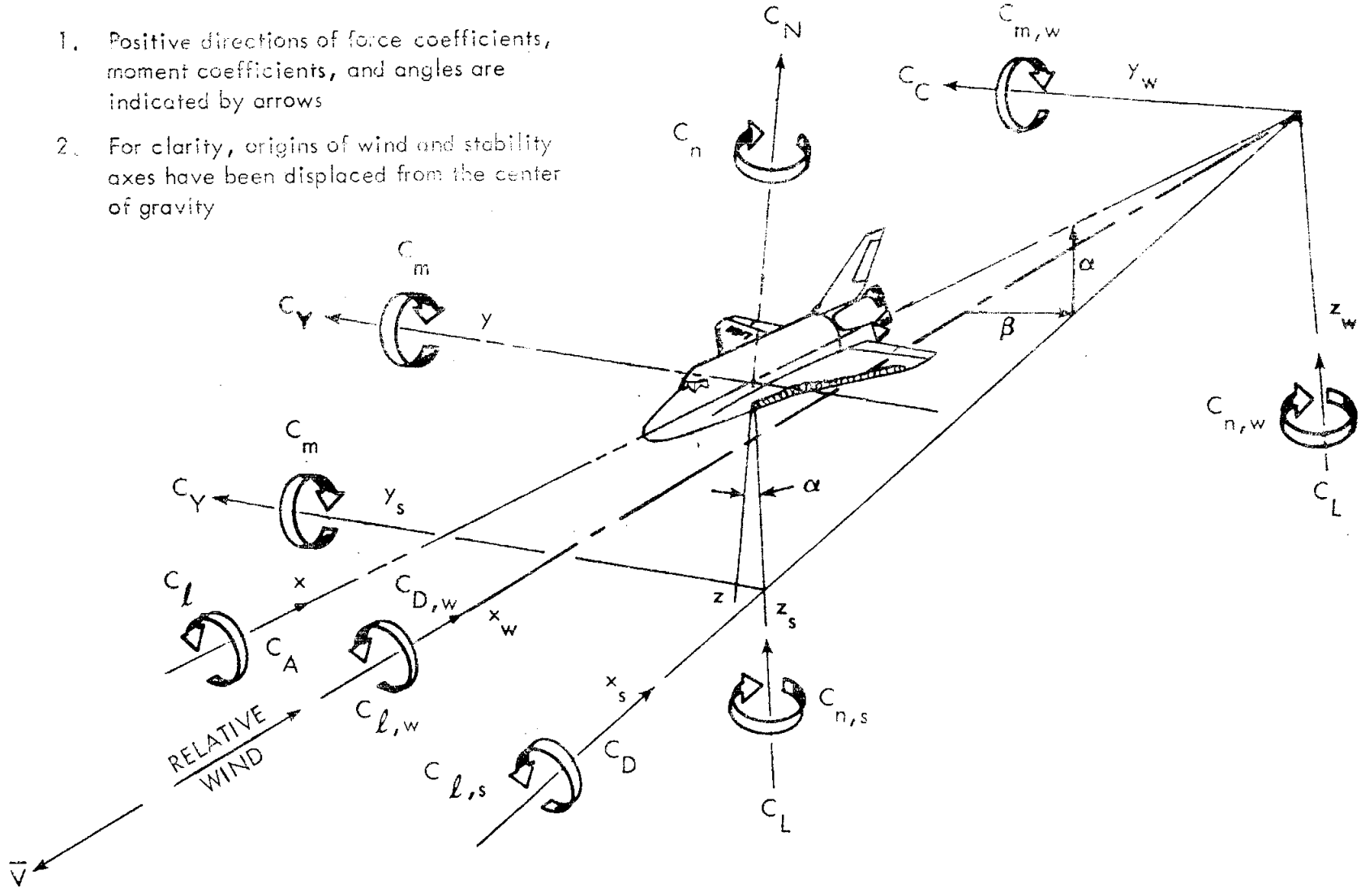
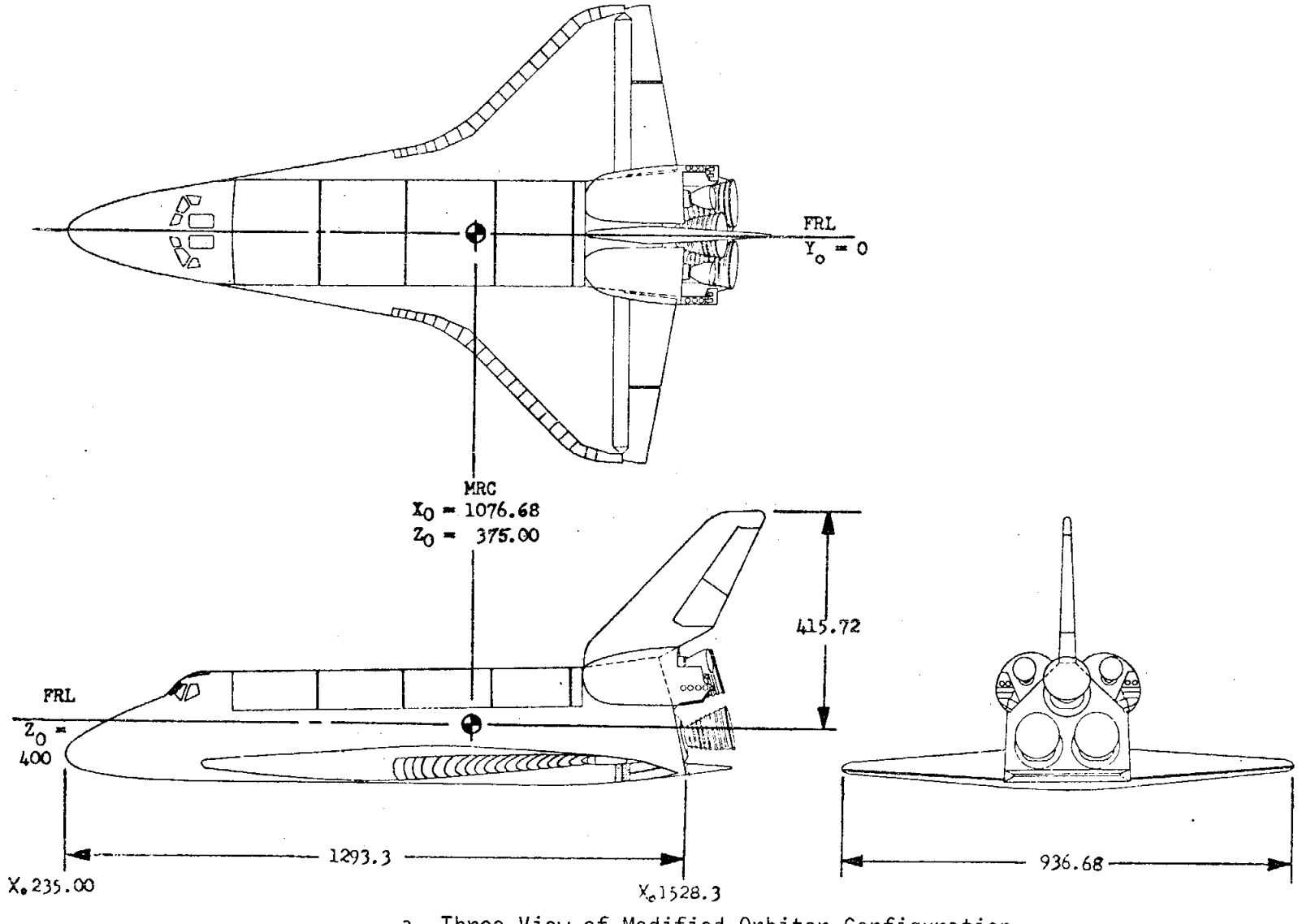
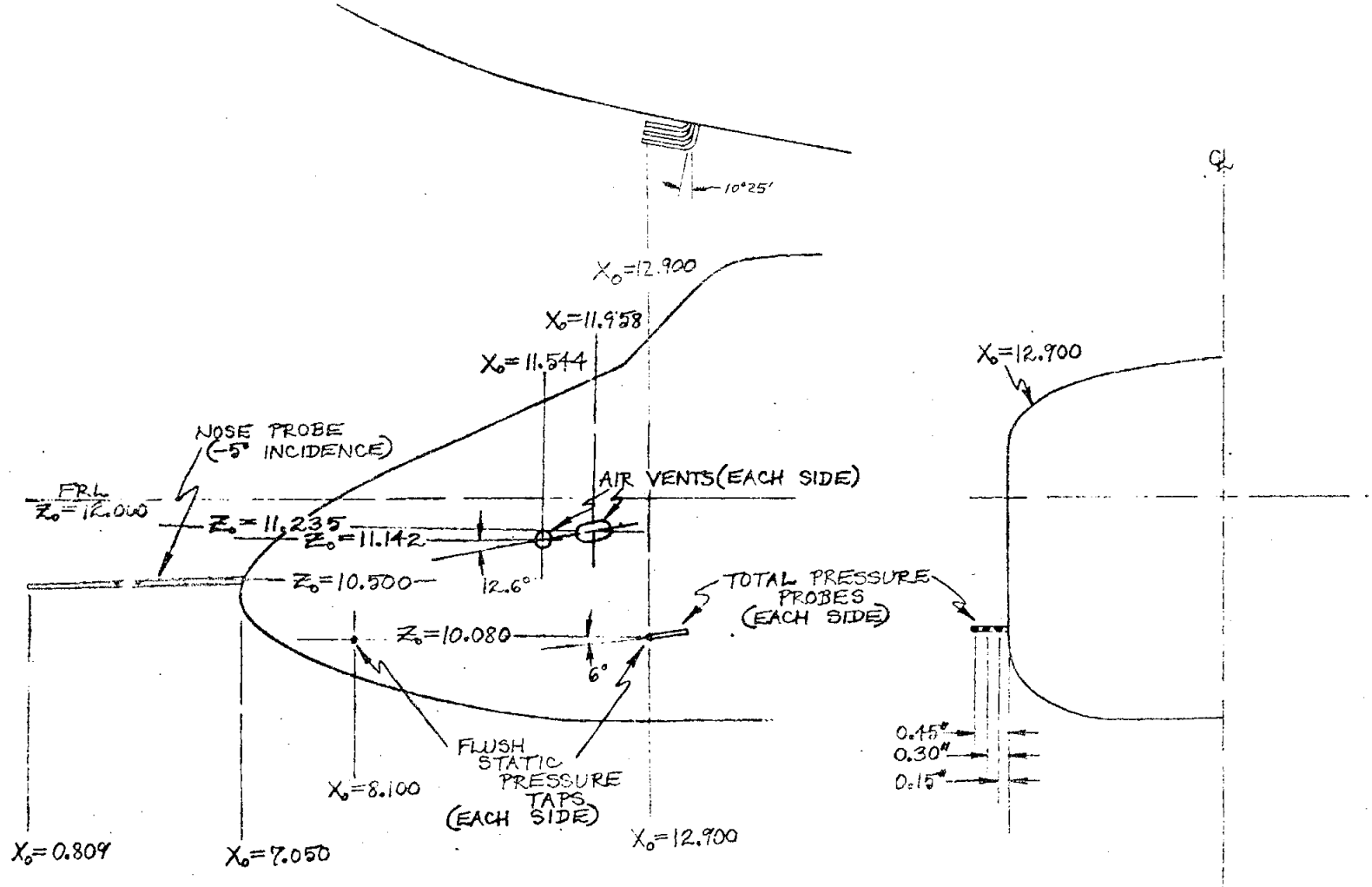


Figure 1. - Axis systems



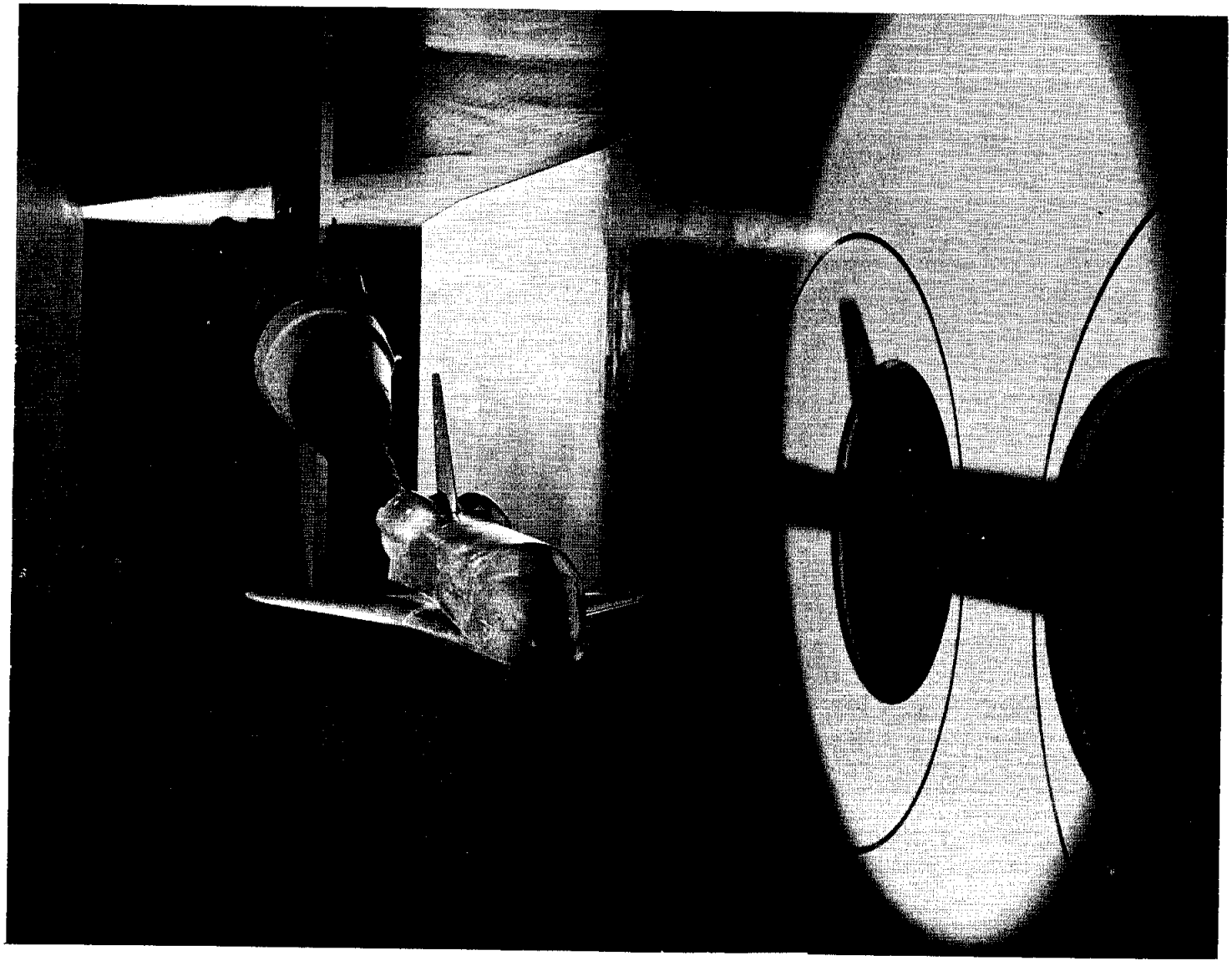
a. Three-View of Modified Orbiter Configuration

Figure 2. - Model sketches.



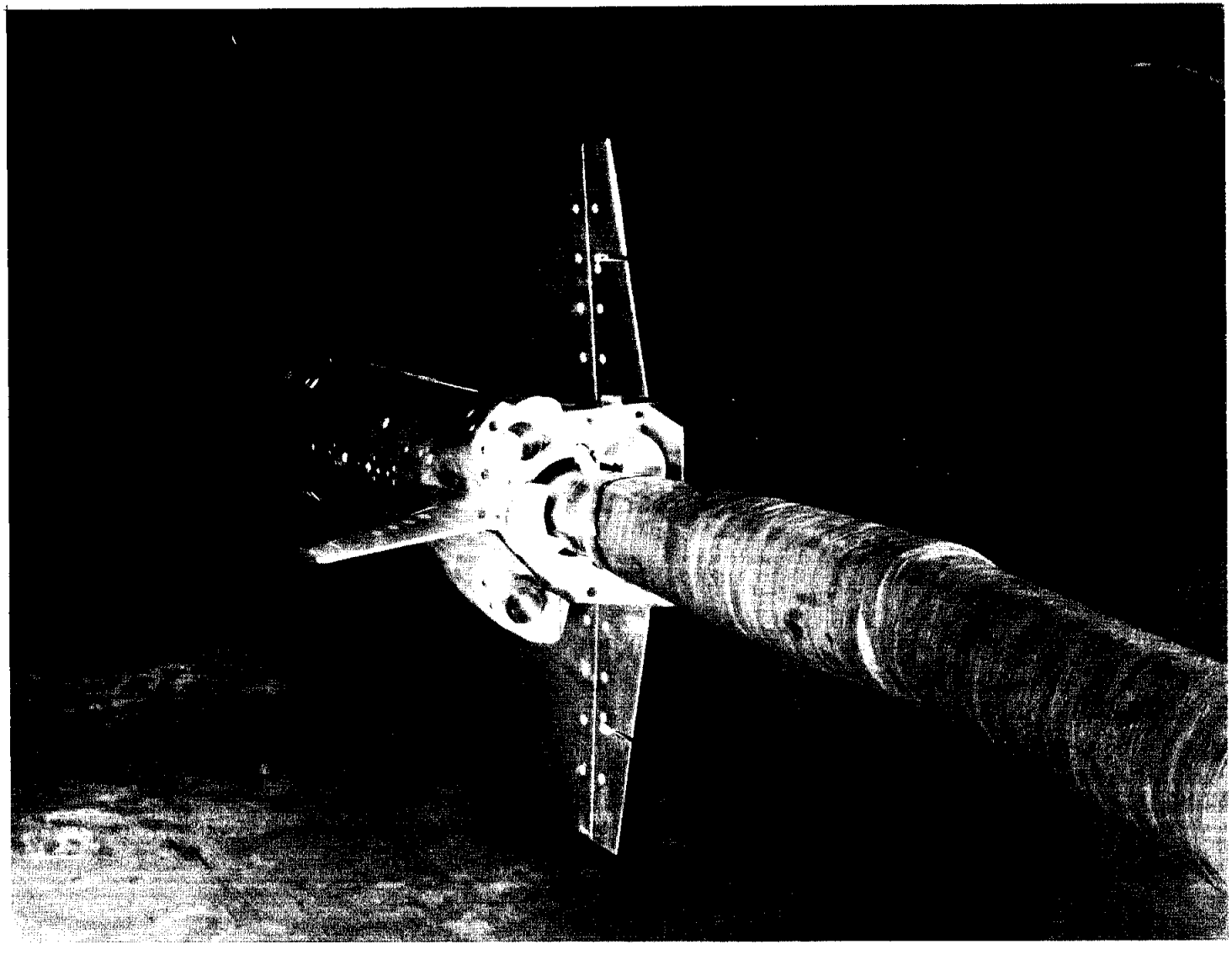
b. Pitot/Static Instrumentation for Model

Figure 2. - Concluded.



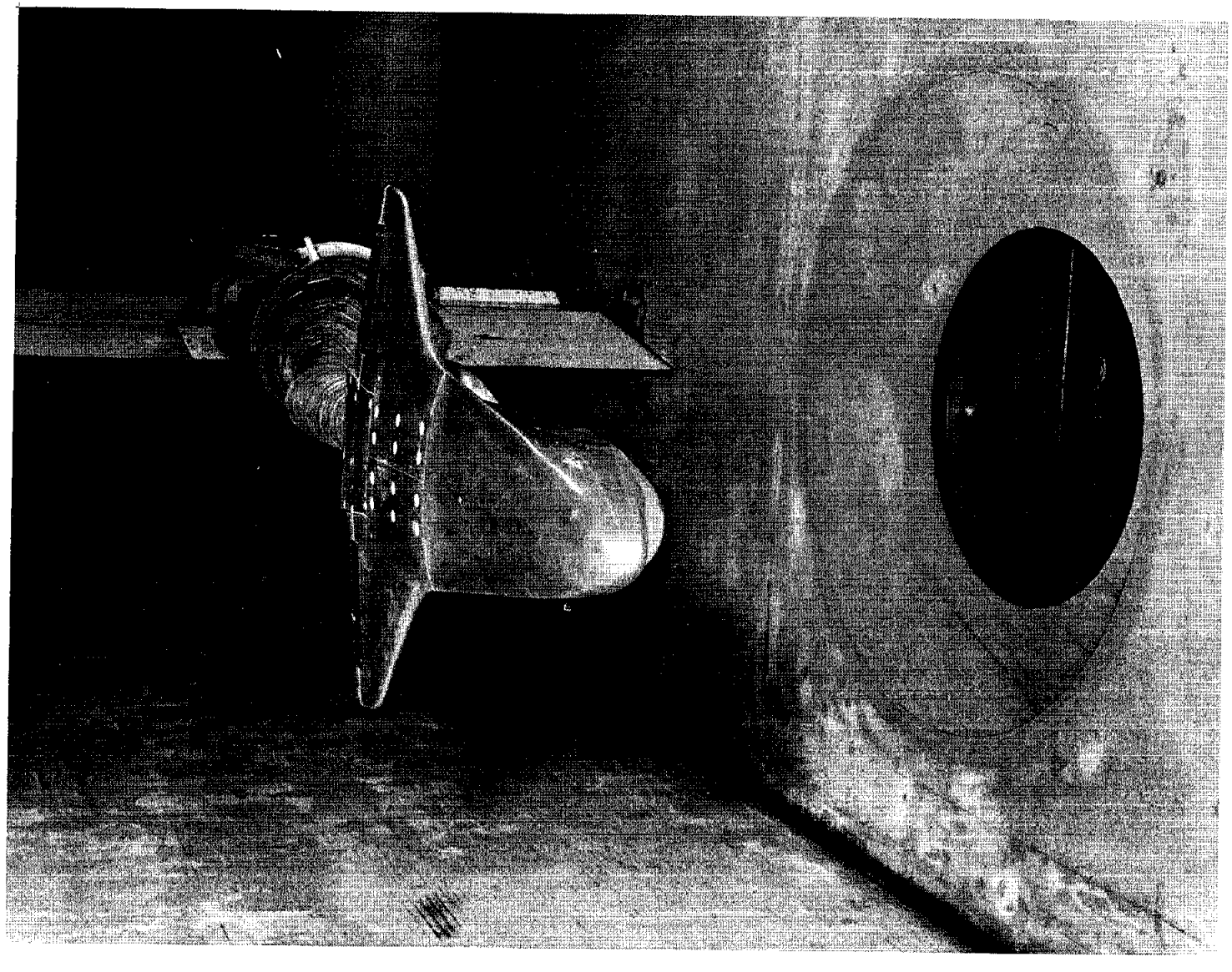
a. Three-Quarter Front View of Model Mounted Upright in the 8 x 7 Foot Tunnel

Figure 3. - Model Photographs.



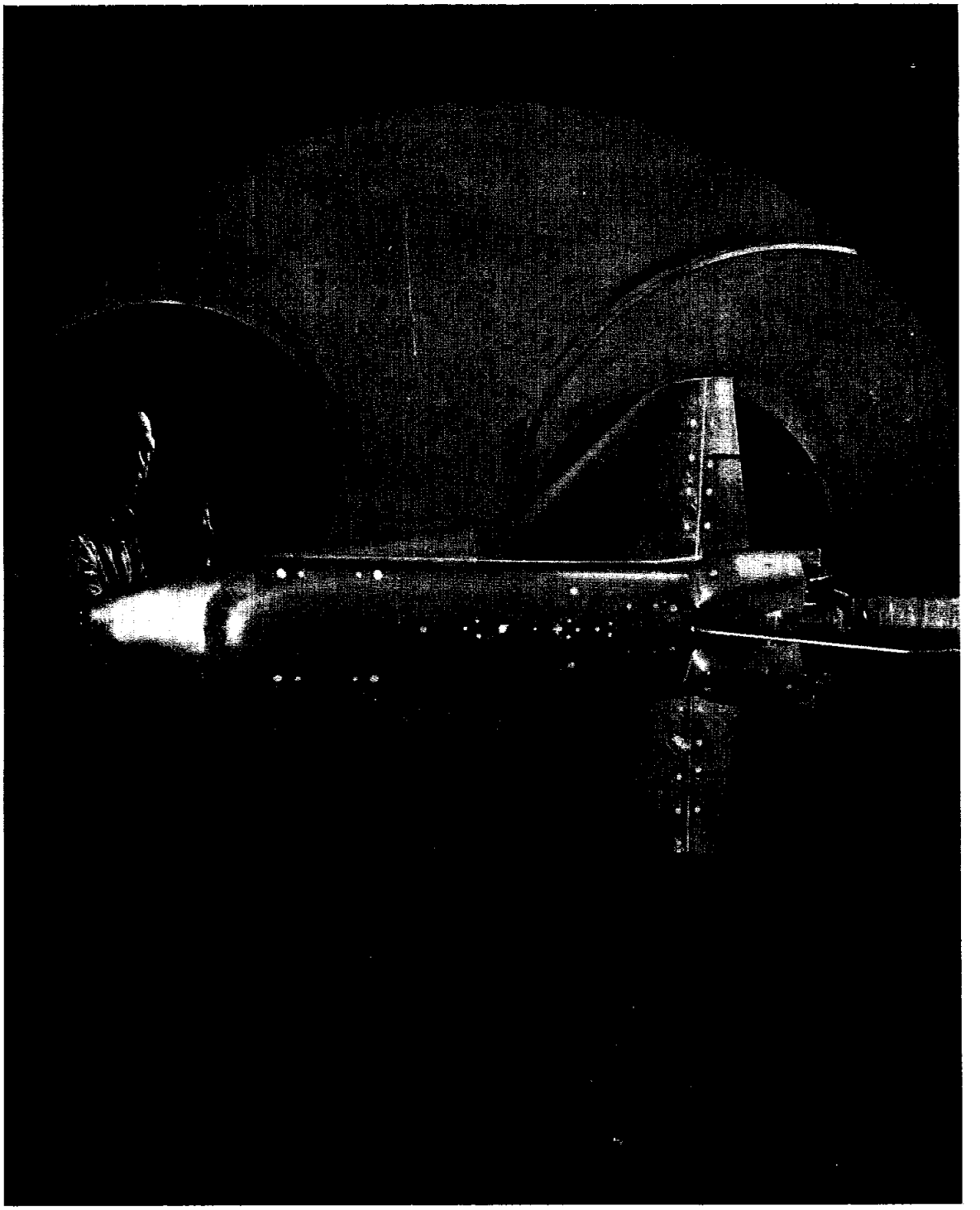
b. Rear View of Model Mounted Sideways in the 8 x 7 Foot Tunnel

Figure 3. - Continued.



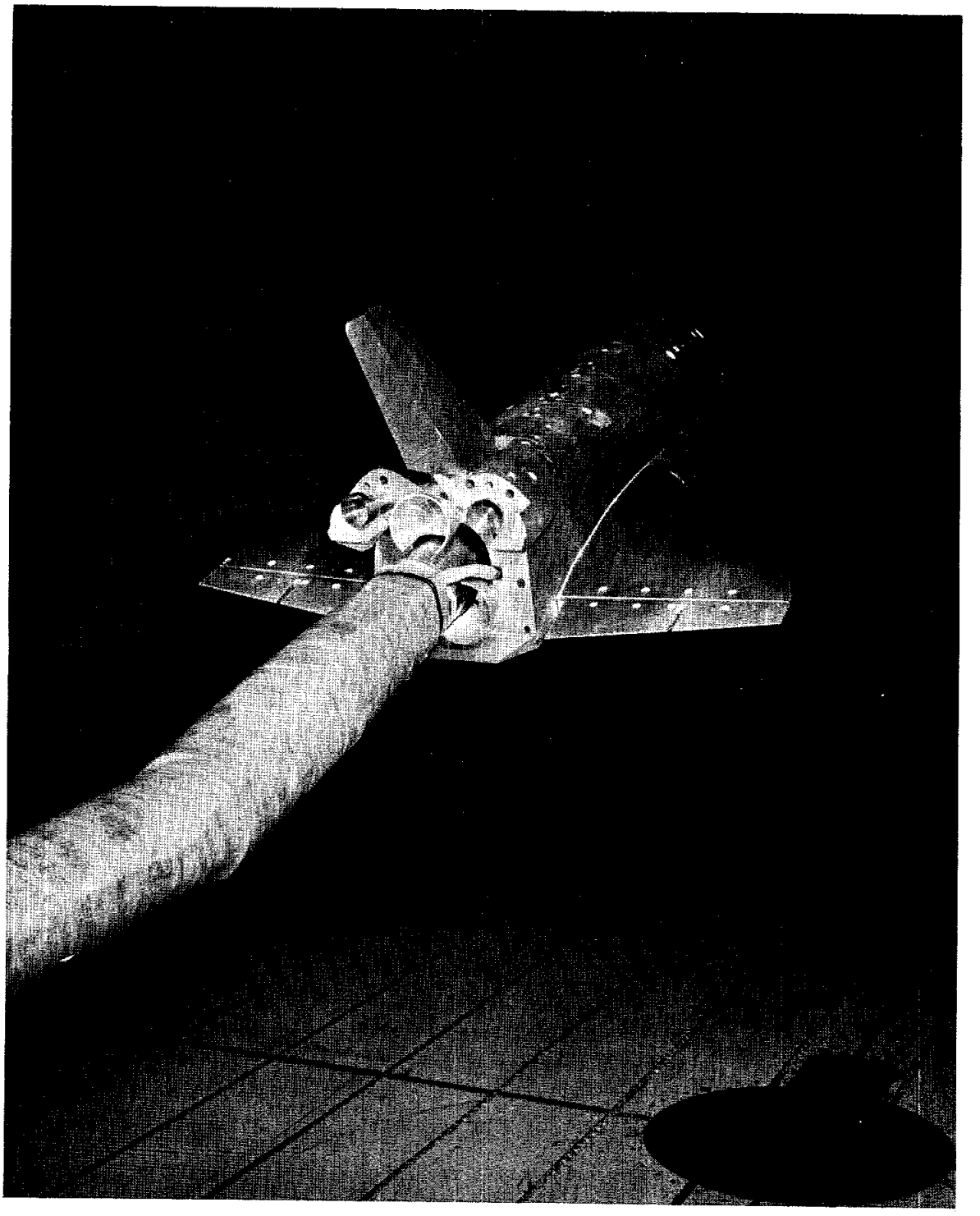
c. Front View of Model Mounted Sideways in the 9 x 7 Foot Tunnel

Figure 3. - Continued.



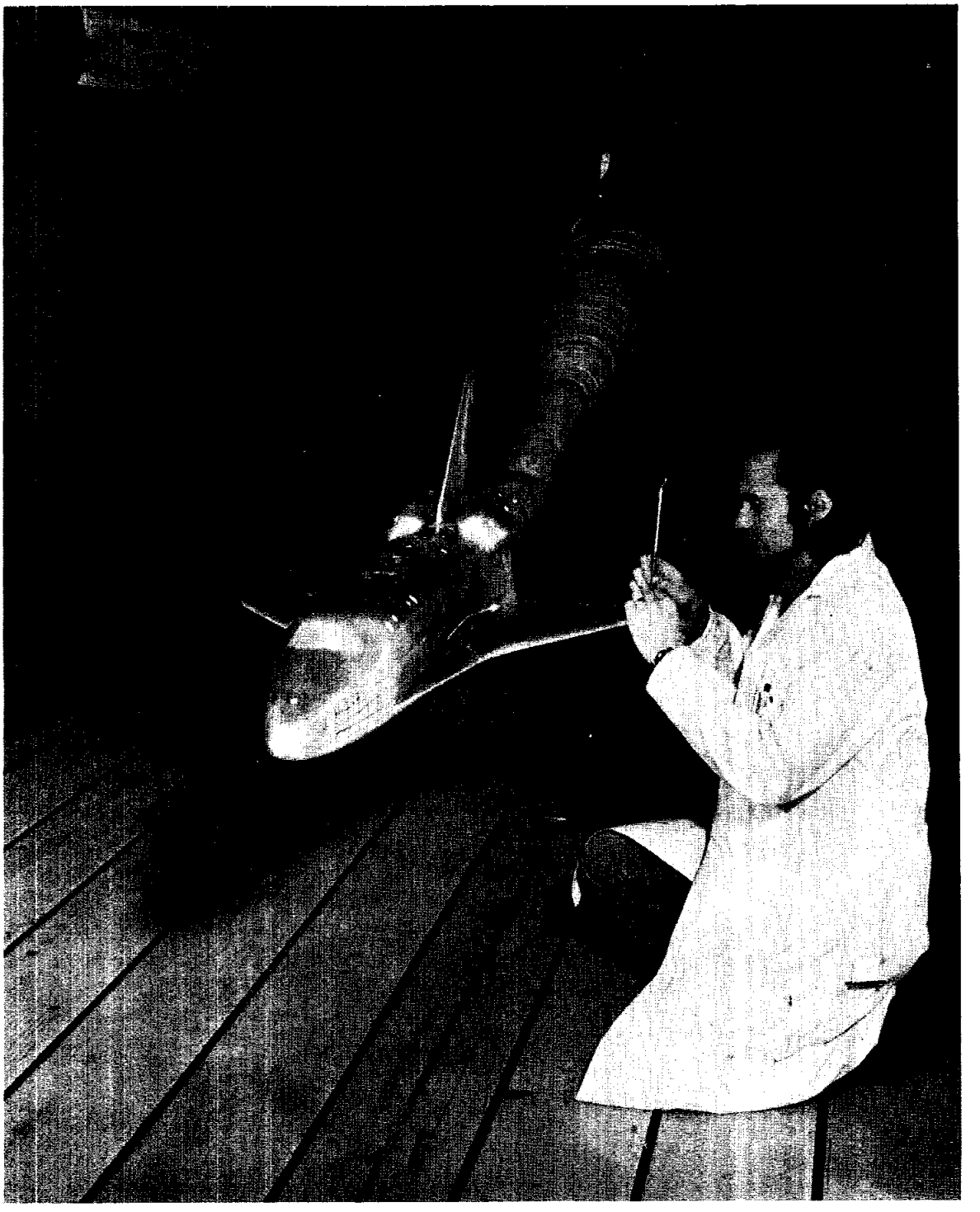
d. Top View of Model Mounted Sideways in the 9 x 7 Foot Tunnel

Figure 3. - Continued.



e. Rear View of Model Mounted Upright in the 11 x 11 Foot Tunnel

Figure 3. - Continued.



f. Front View of Model Mounted Upright in the 11 x 11 Foot Tunnel

Figure 3. - Concluded.

DATA FIGURES

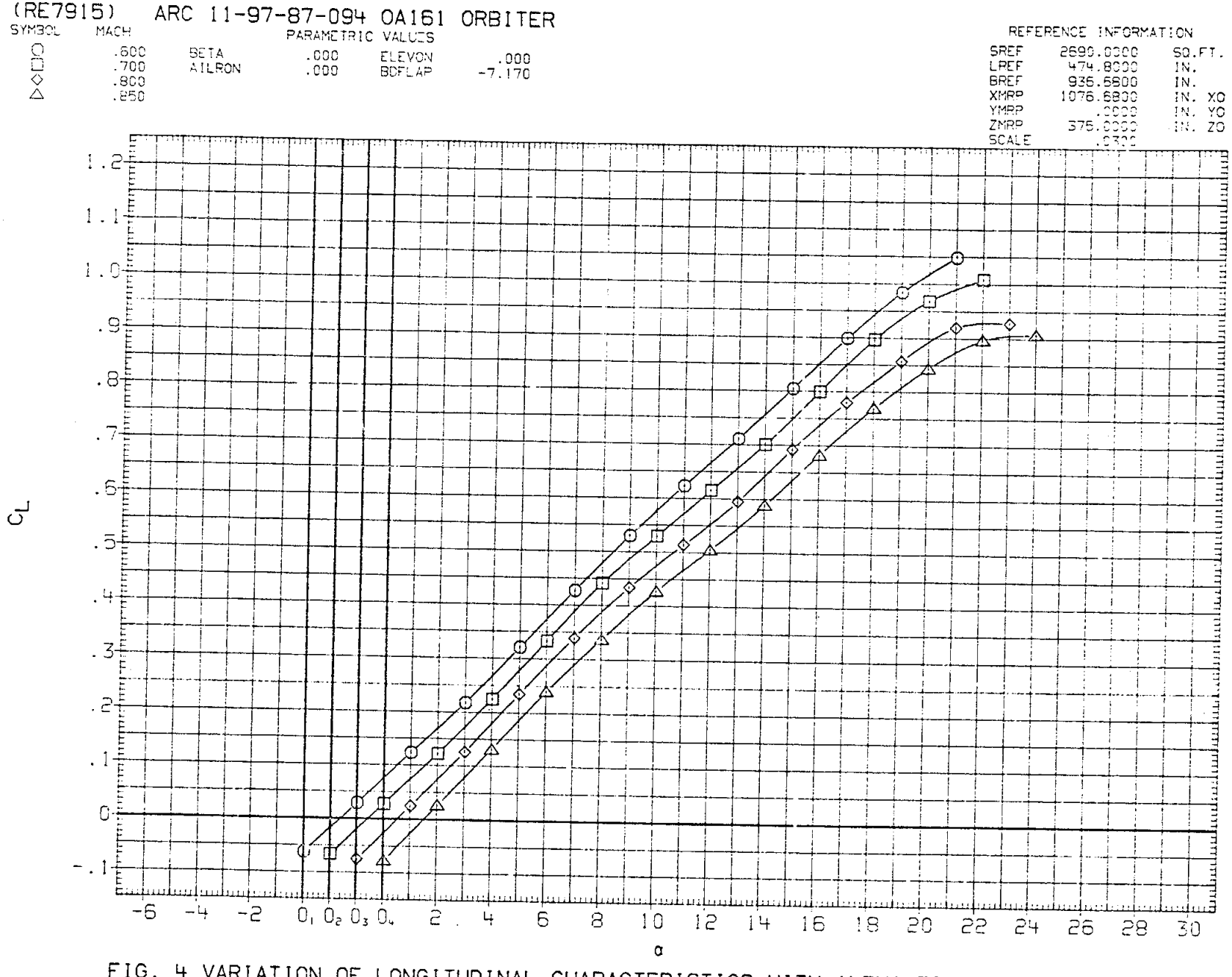


FIG. 4 VARIATION OF LONGITUDINAL CHARACTERISTICS WITH ALPHA FOR STANDARD ORBITER

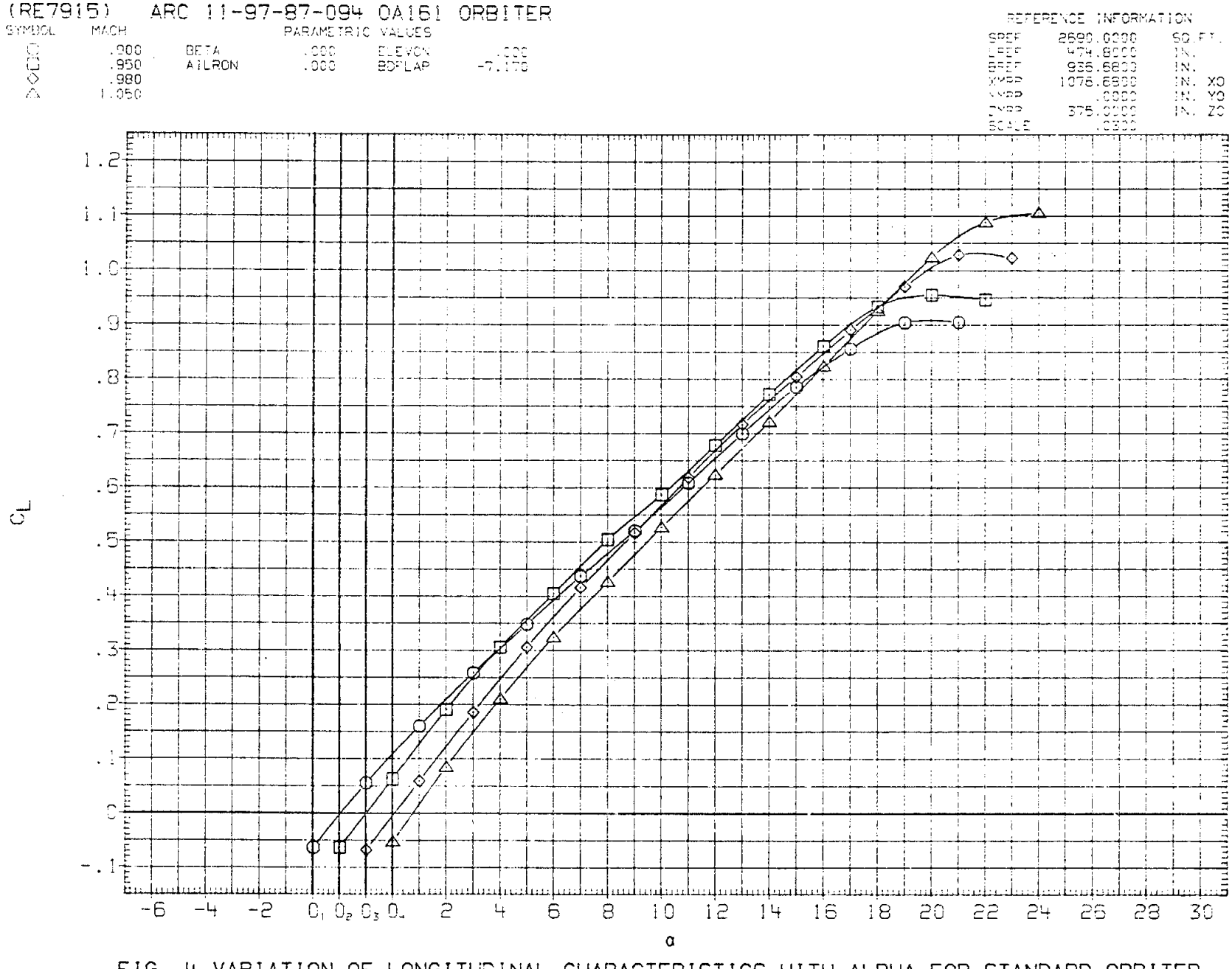


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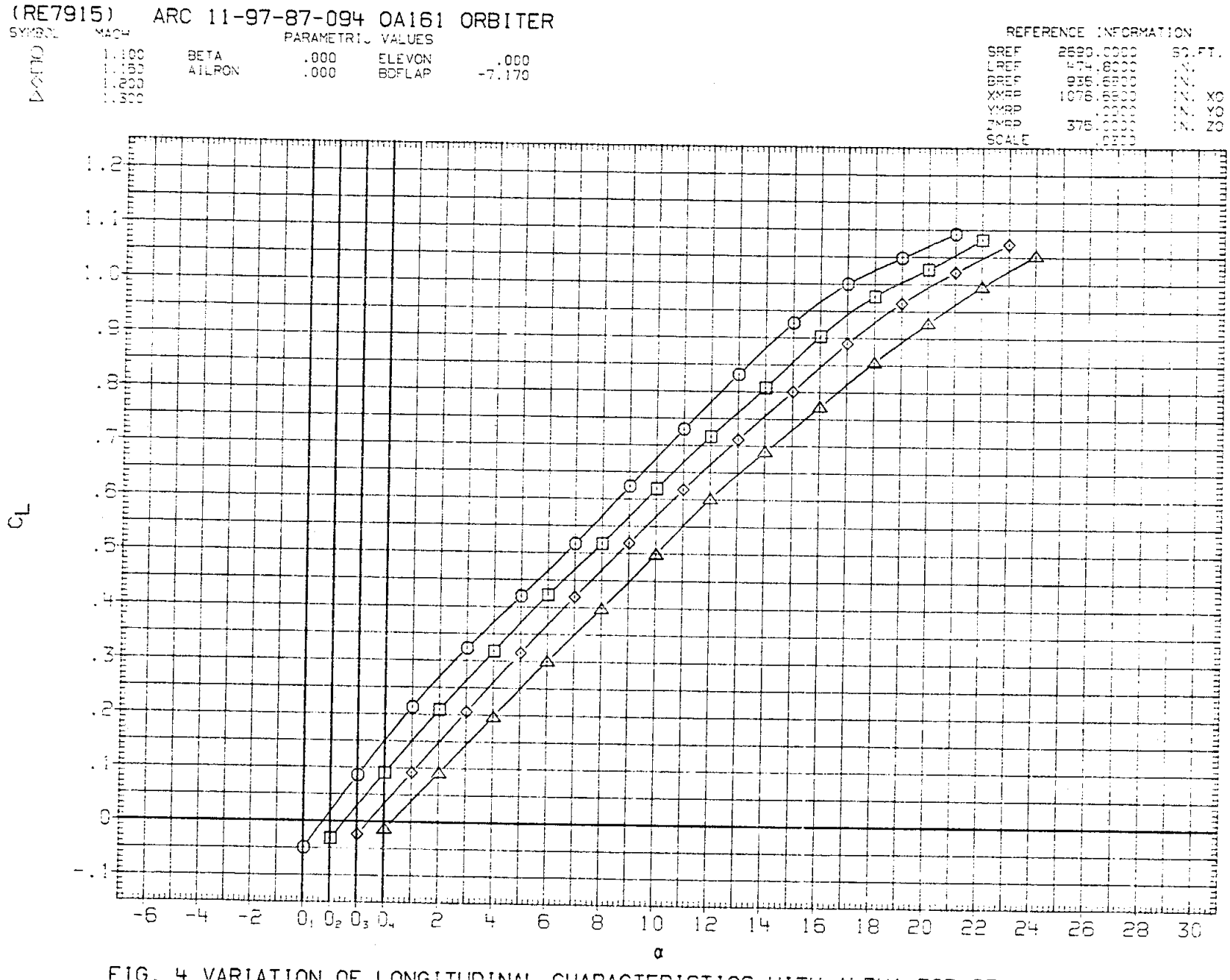


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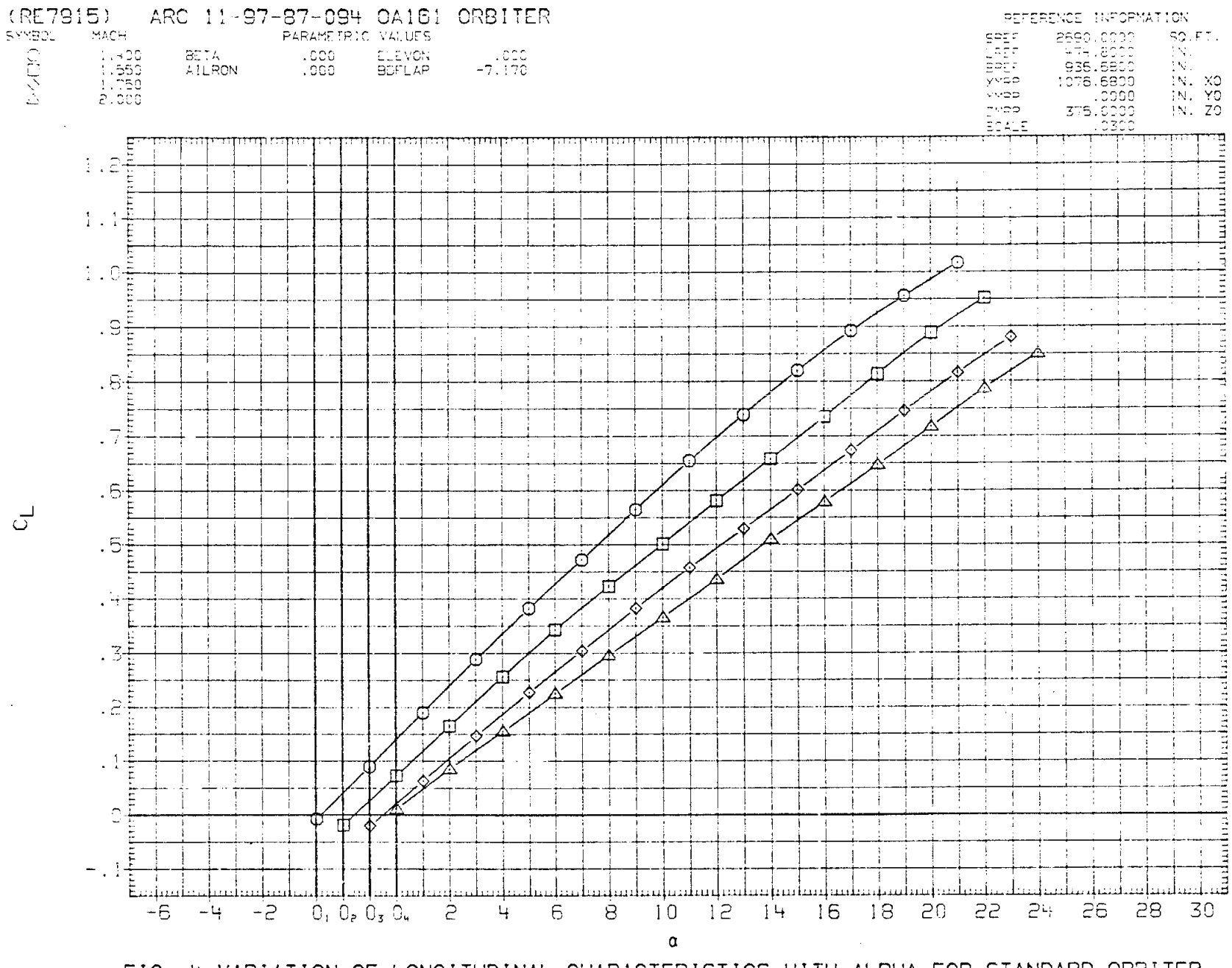


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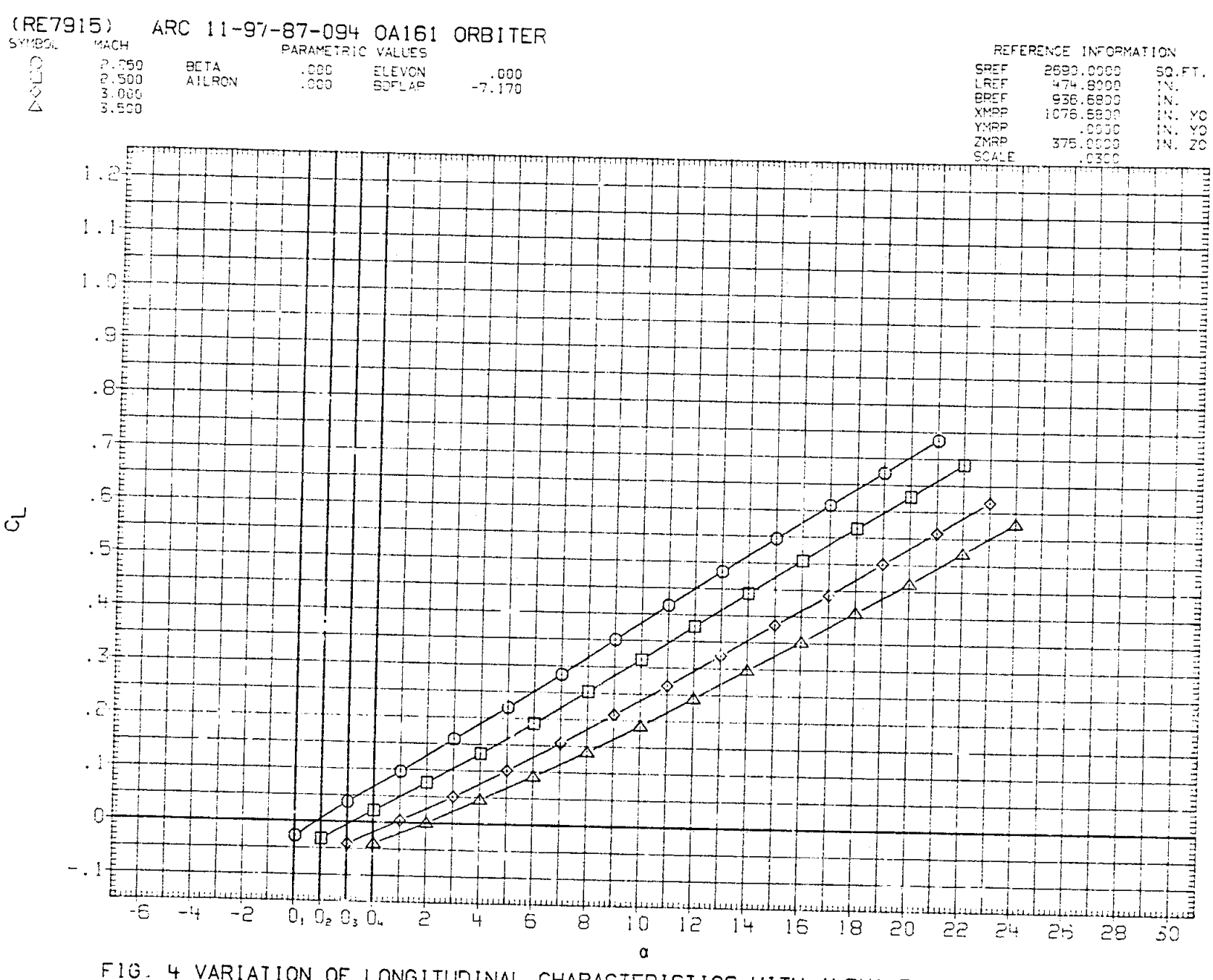


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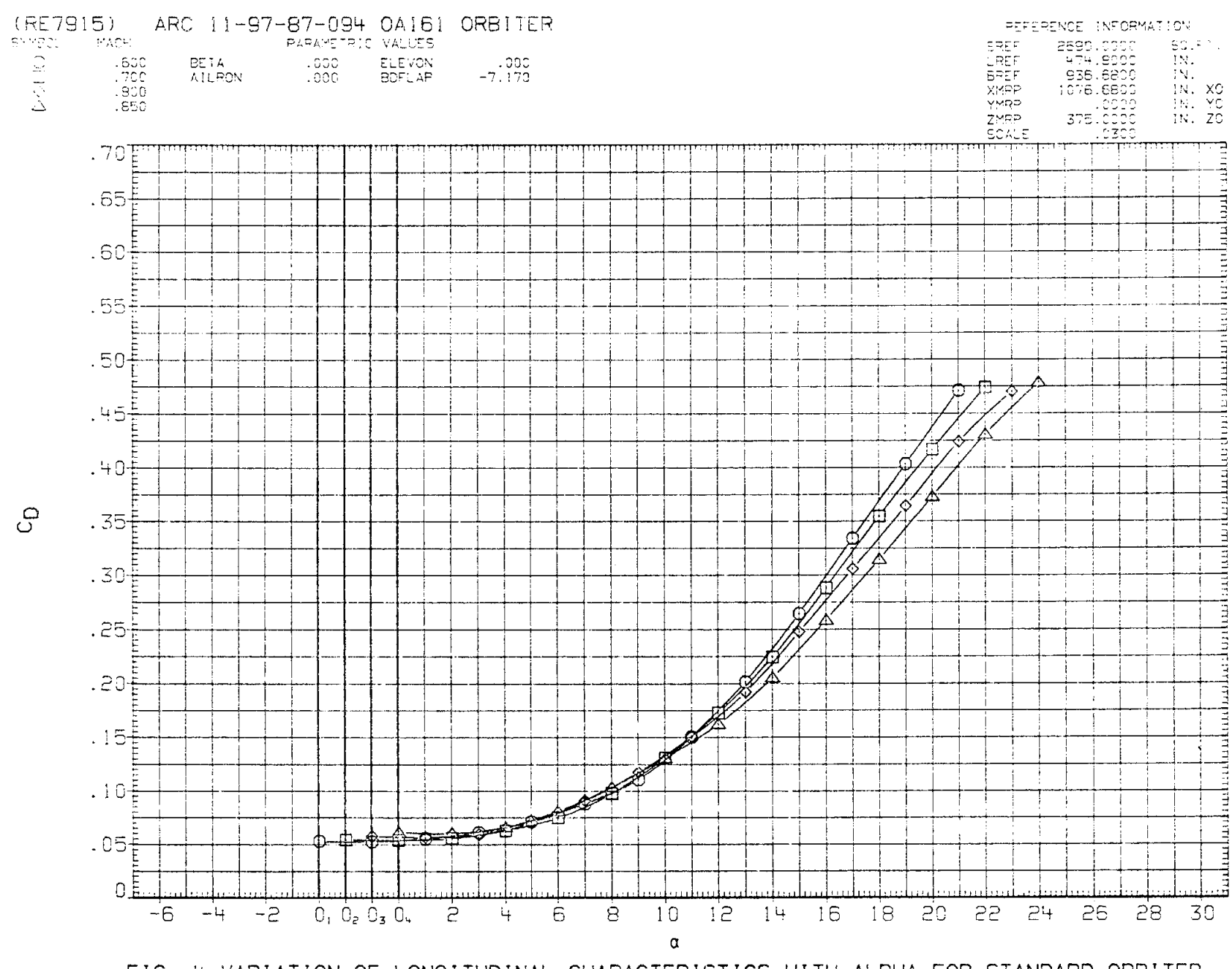


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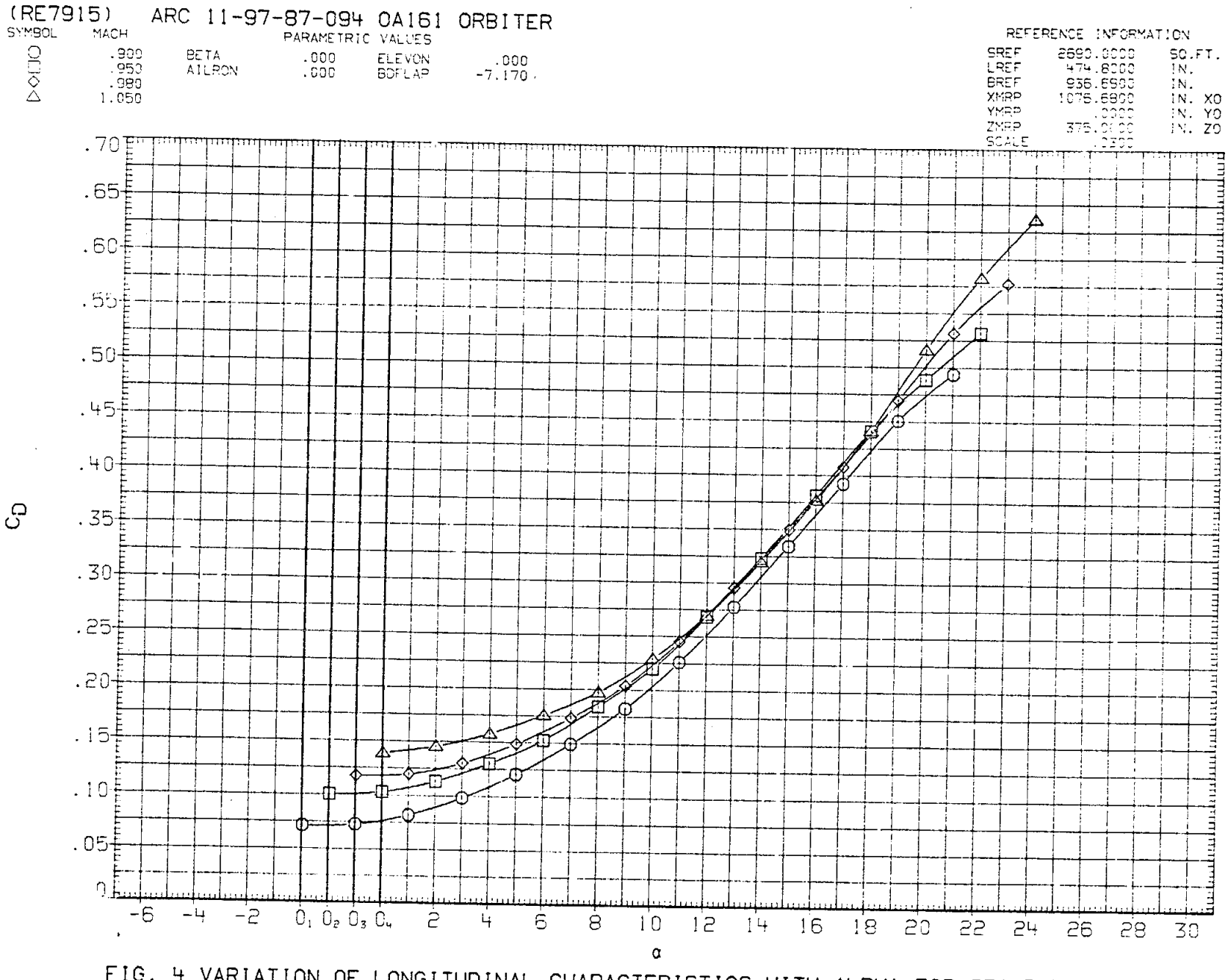


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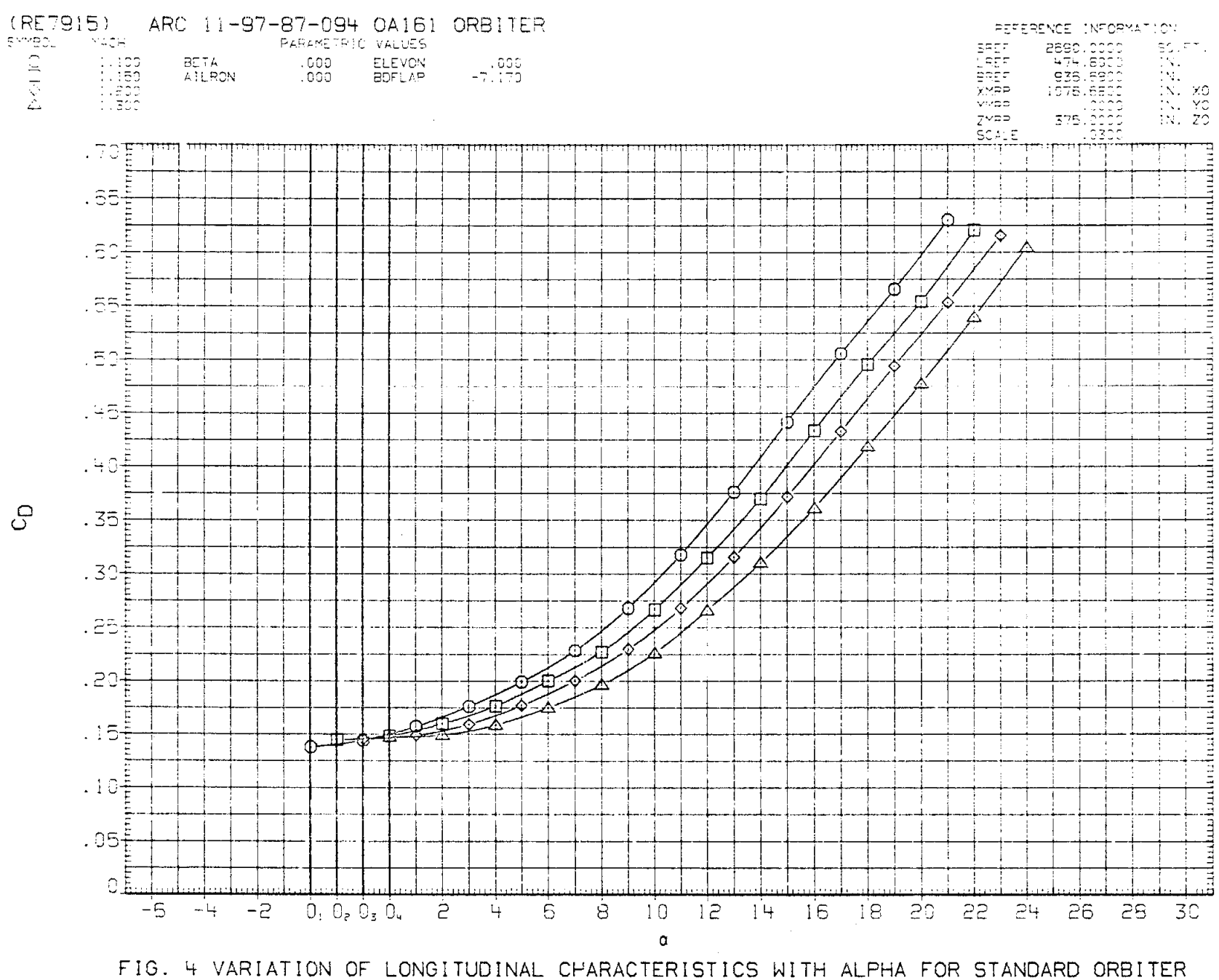


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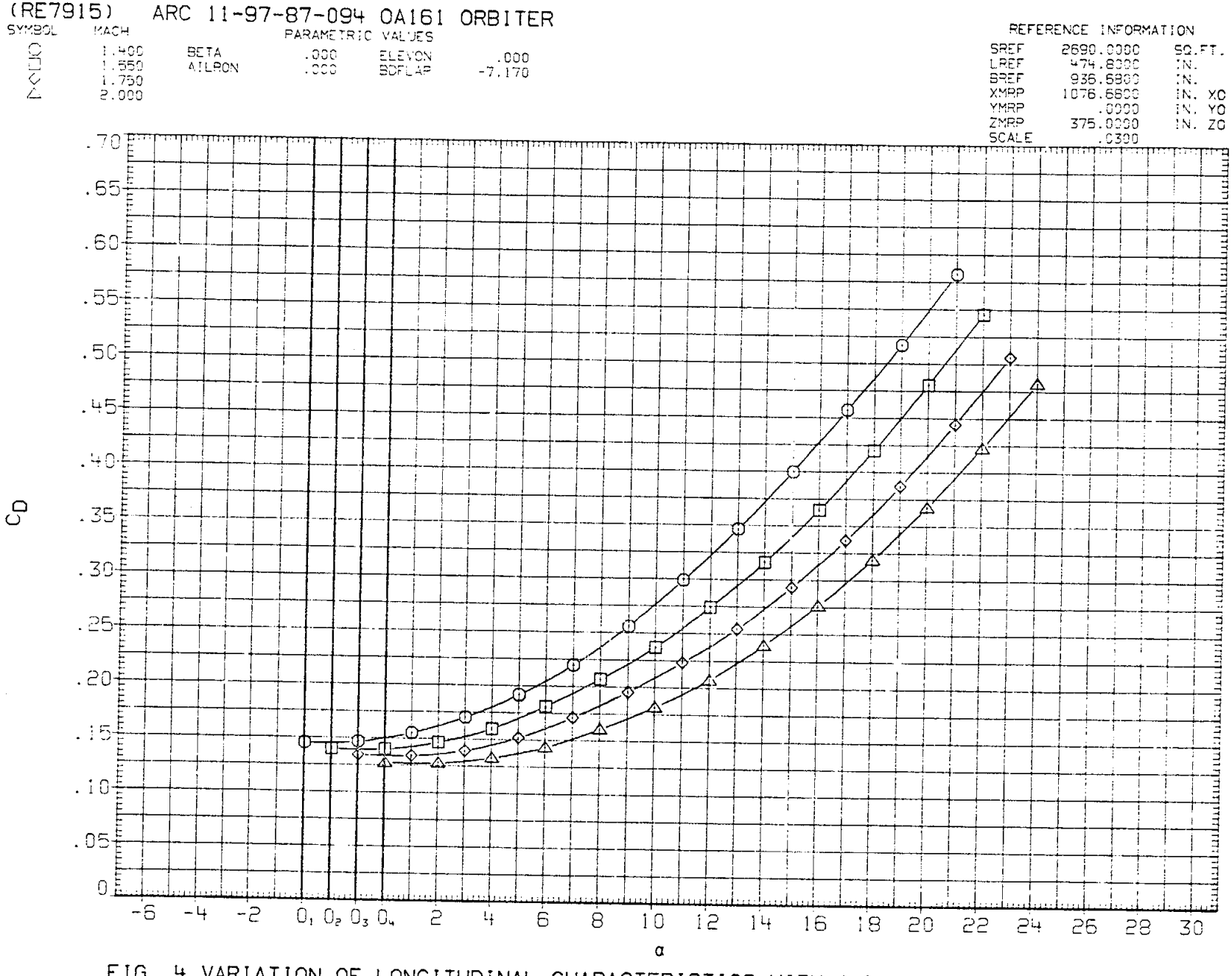


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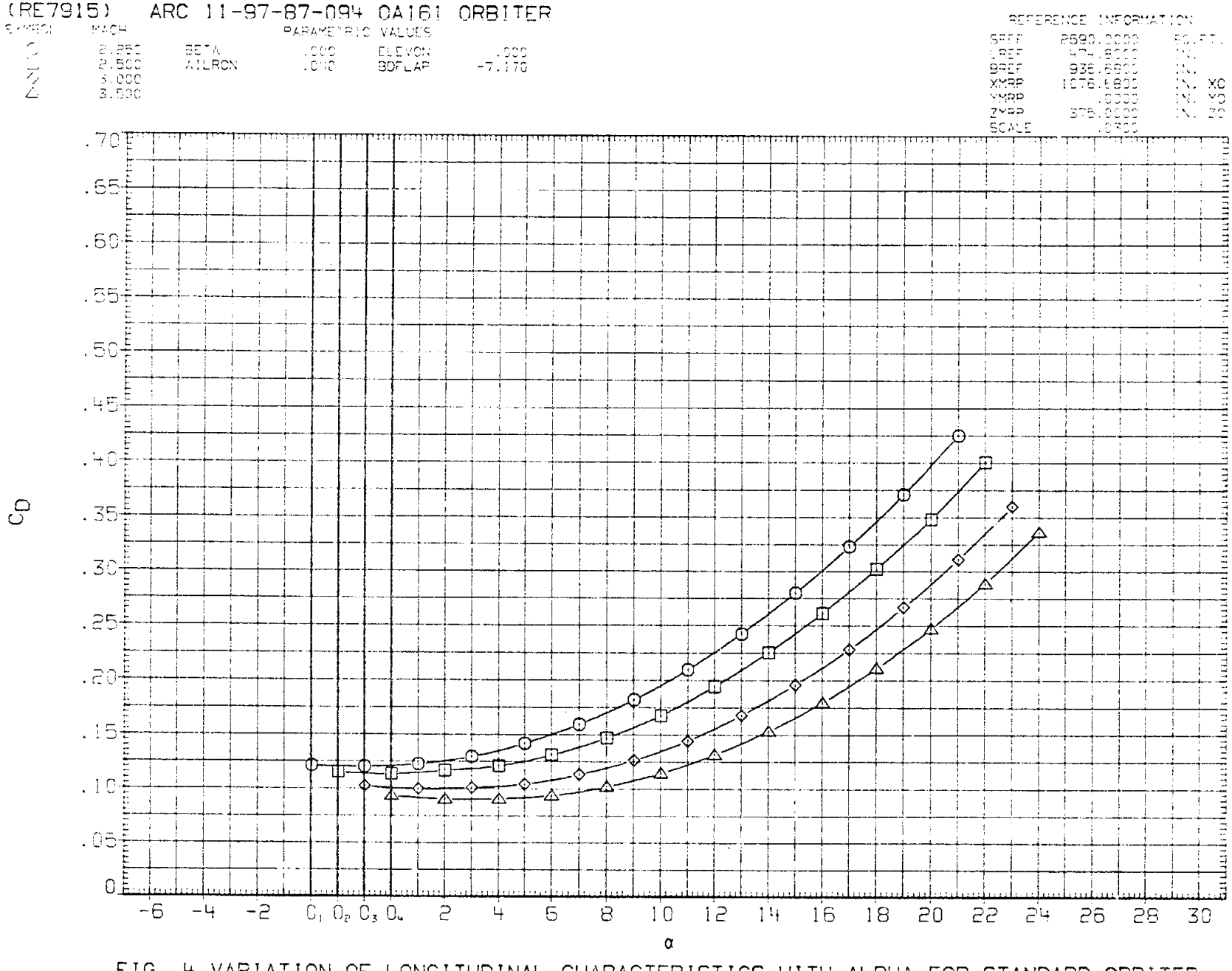


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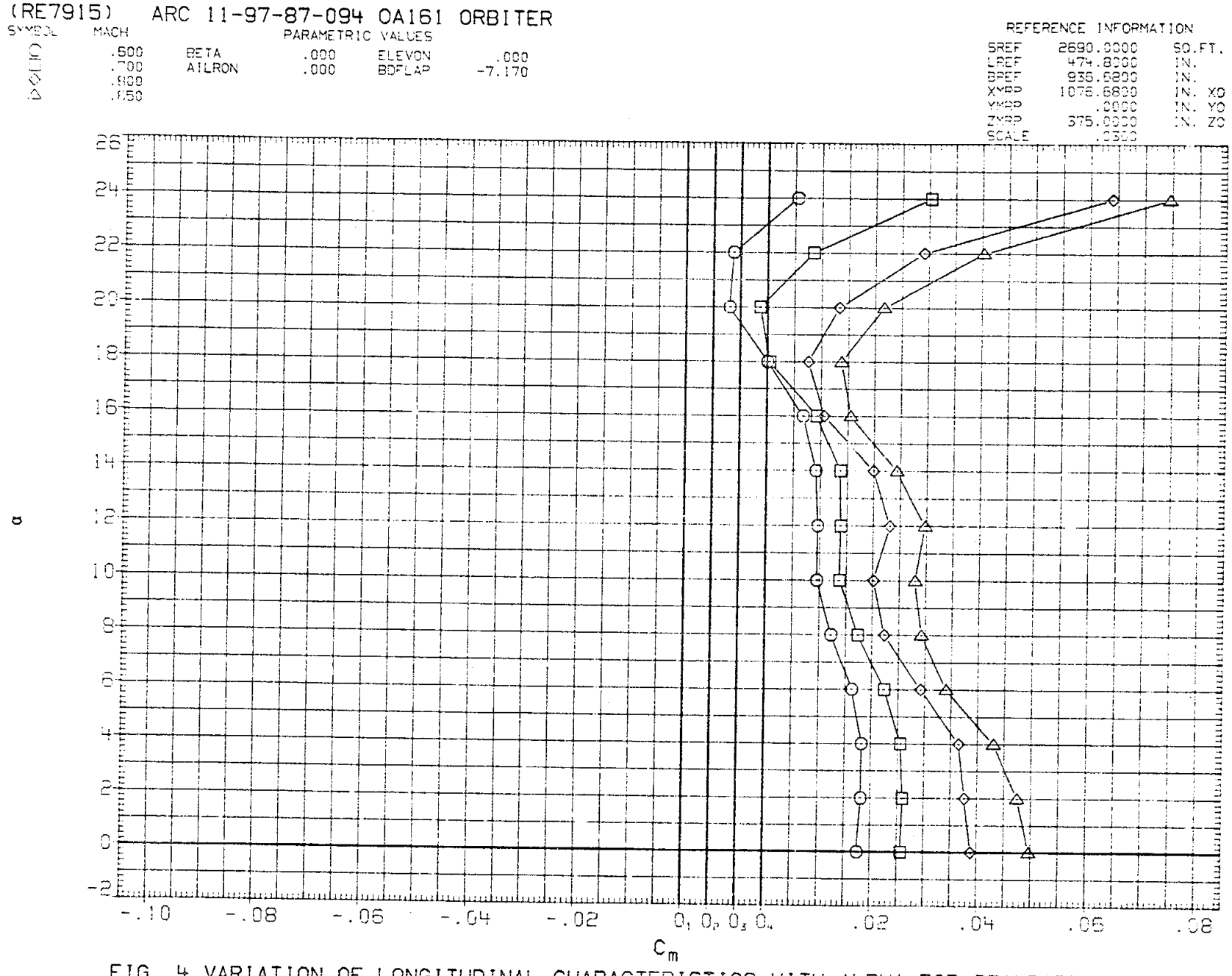


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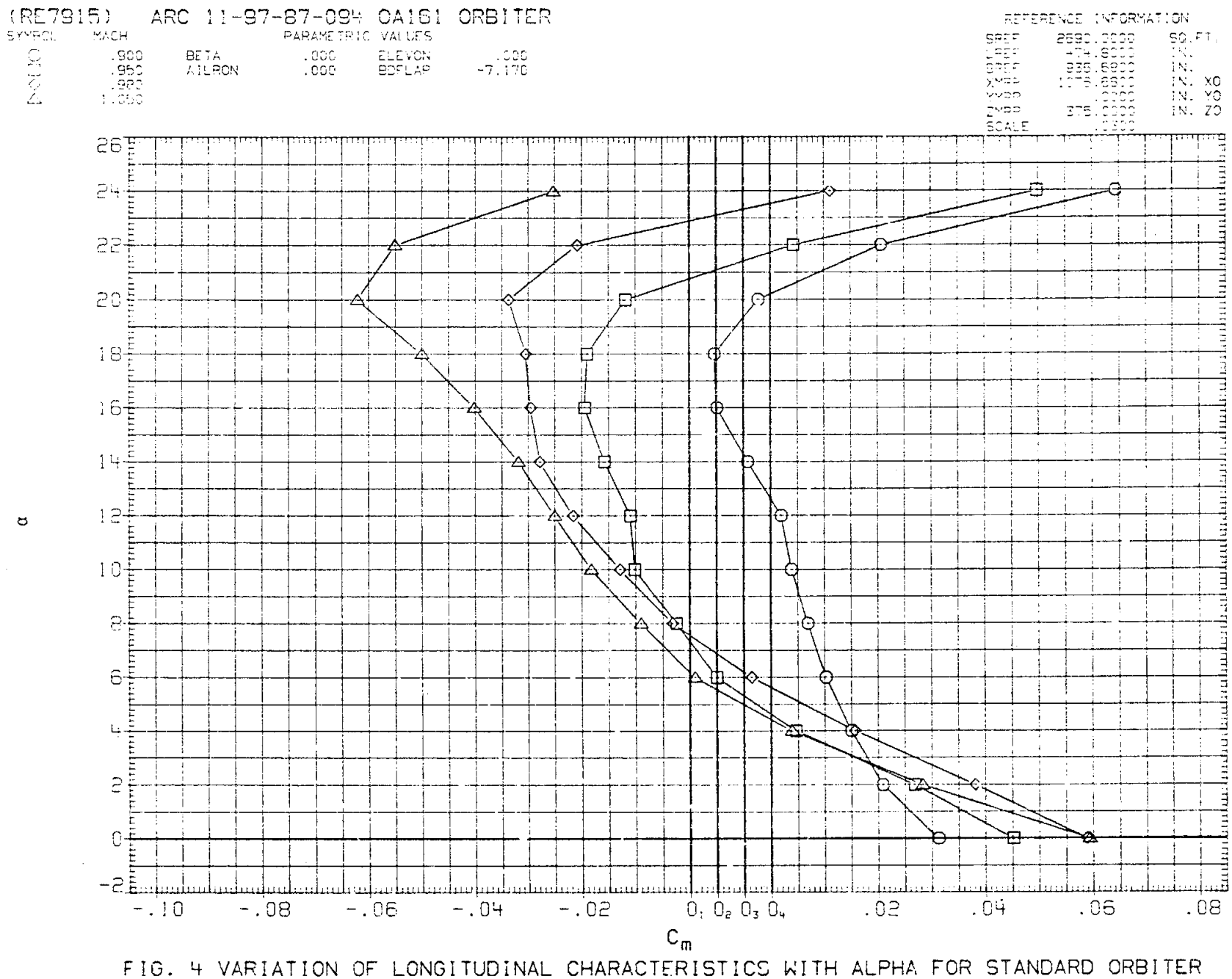


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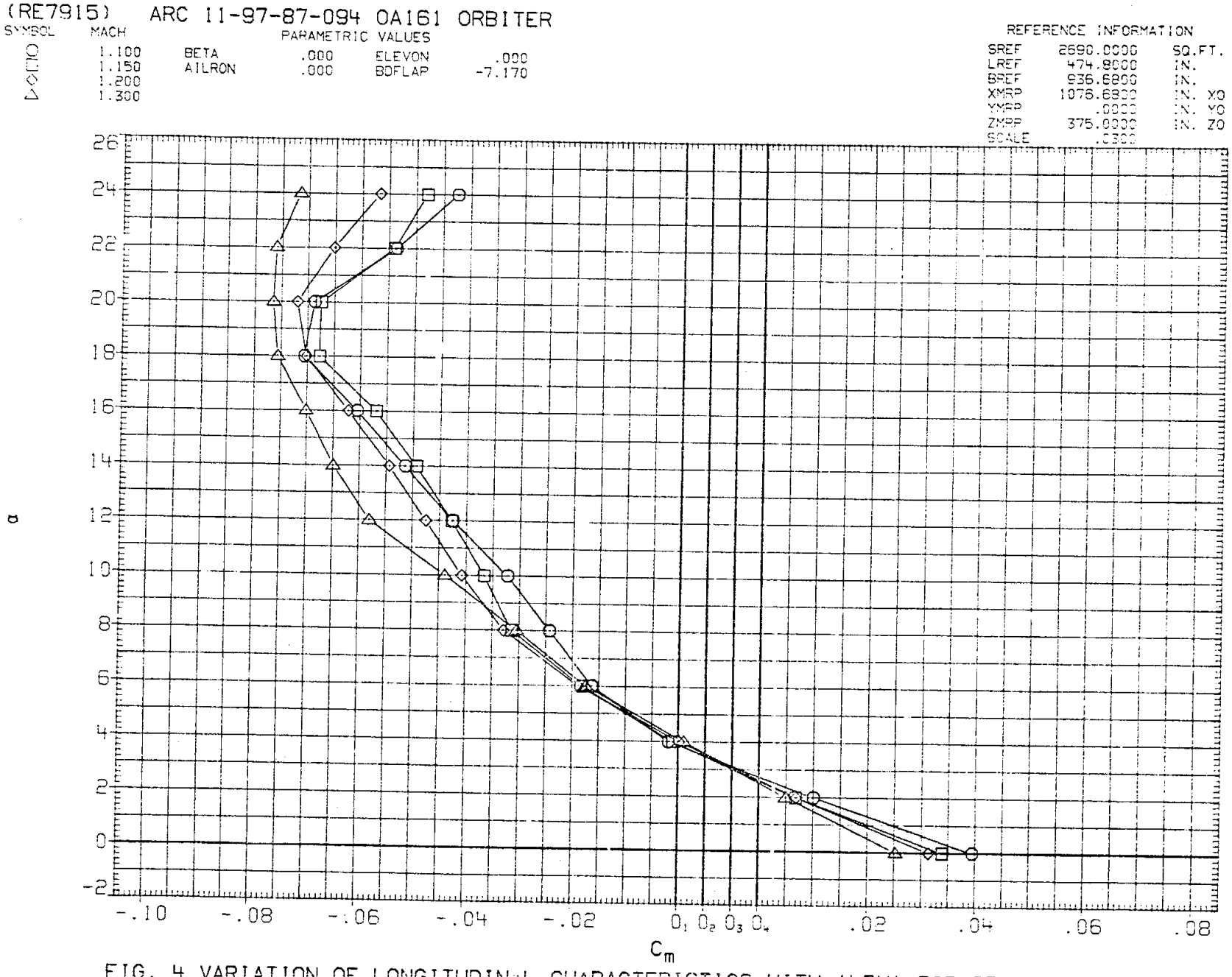


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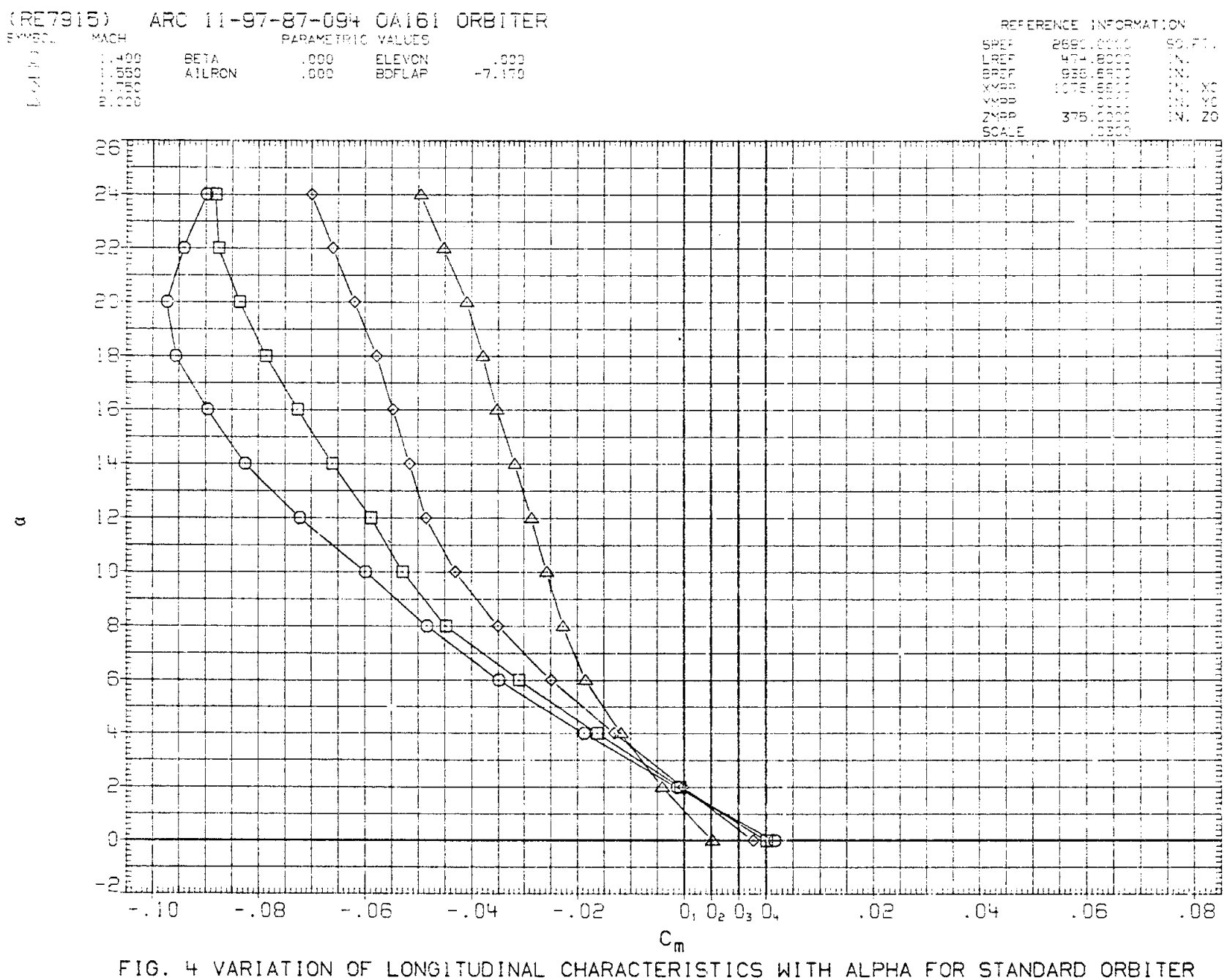


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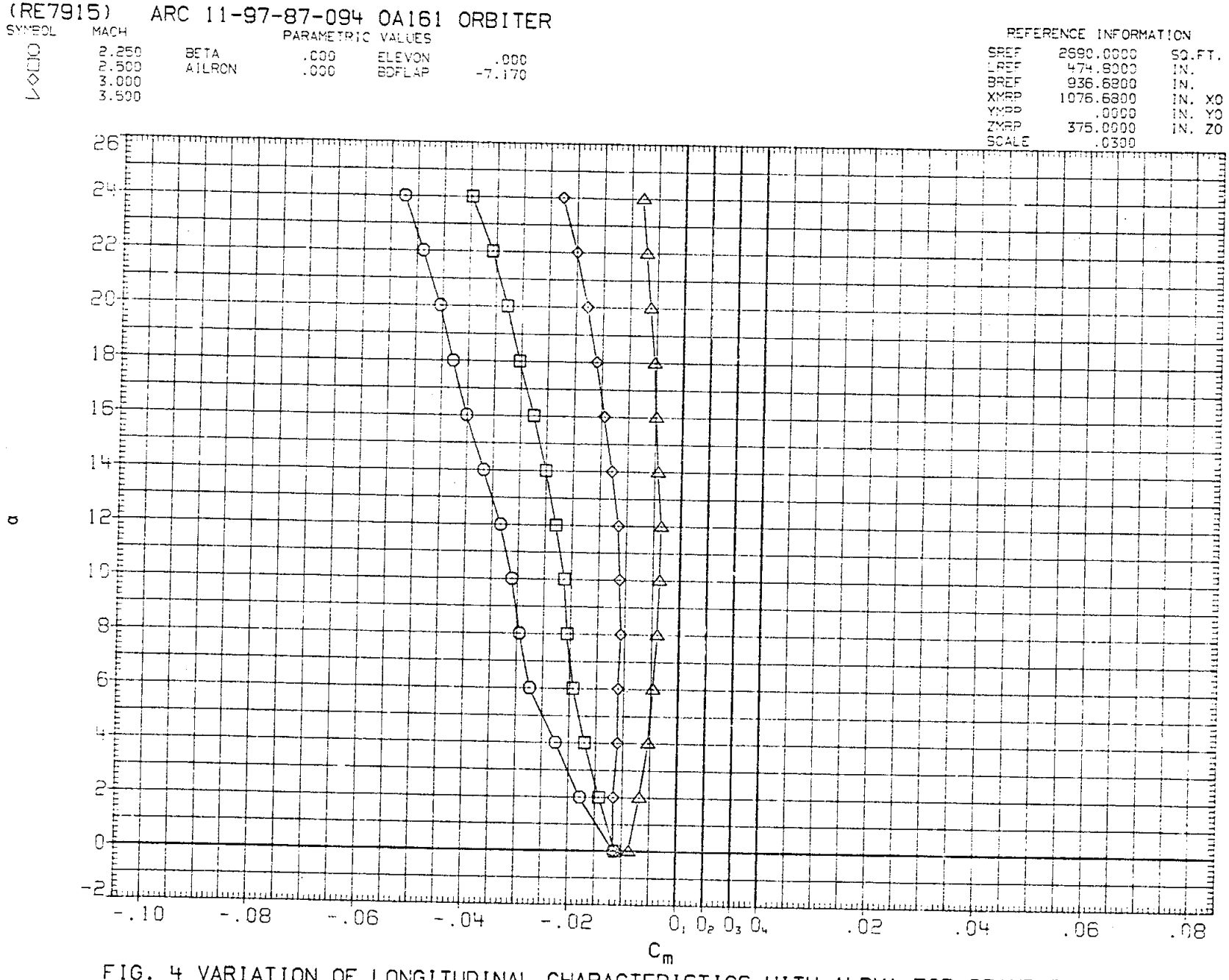


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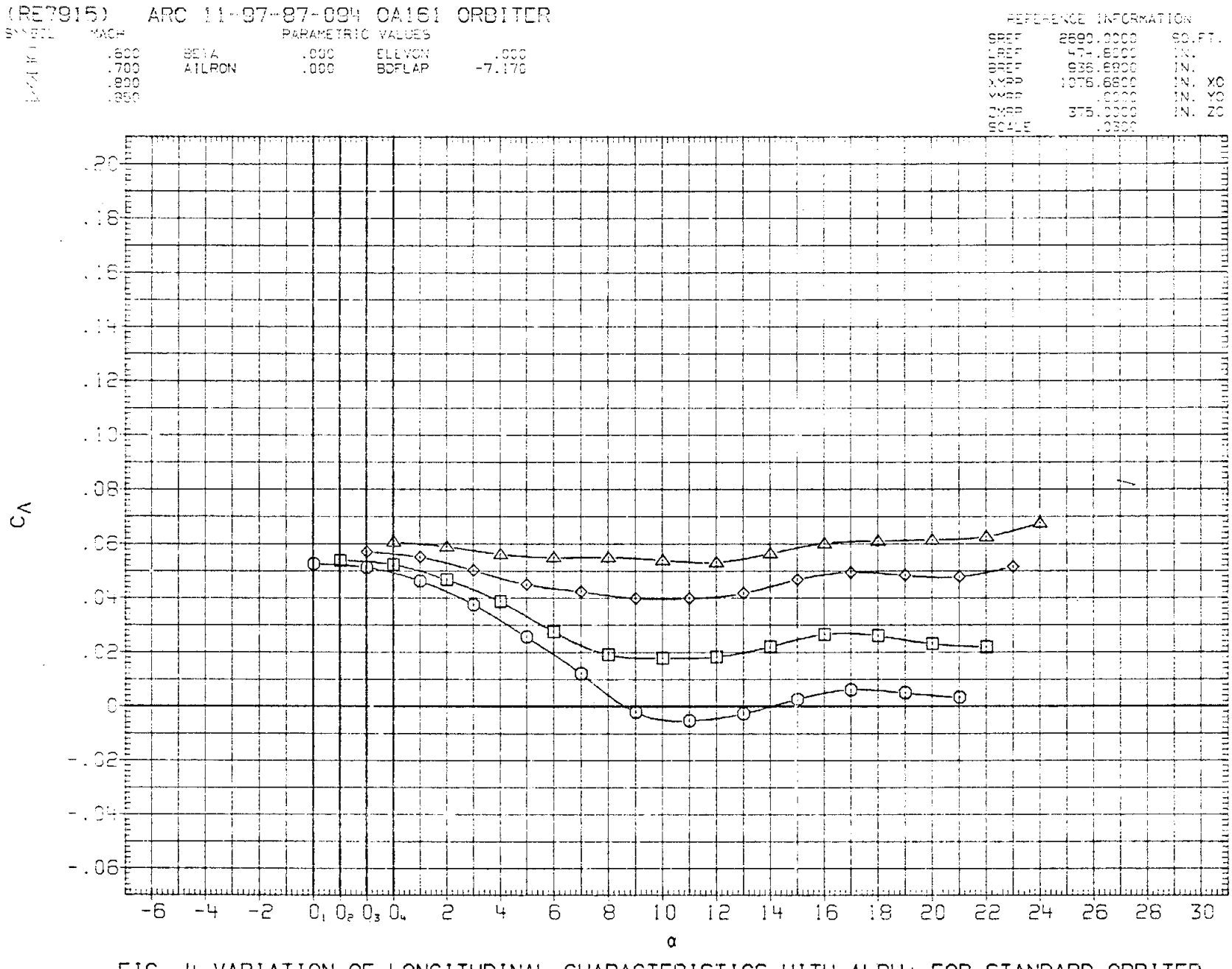


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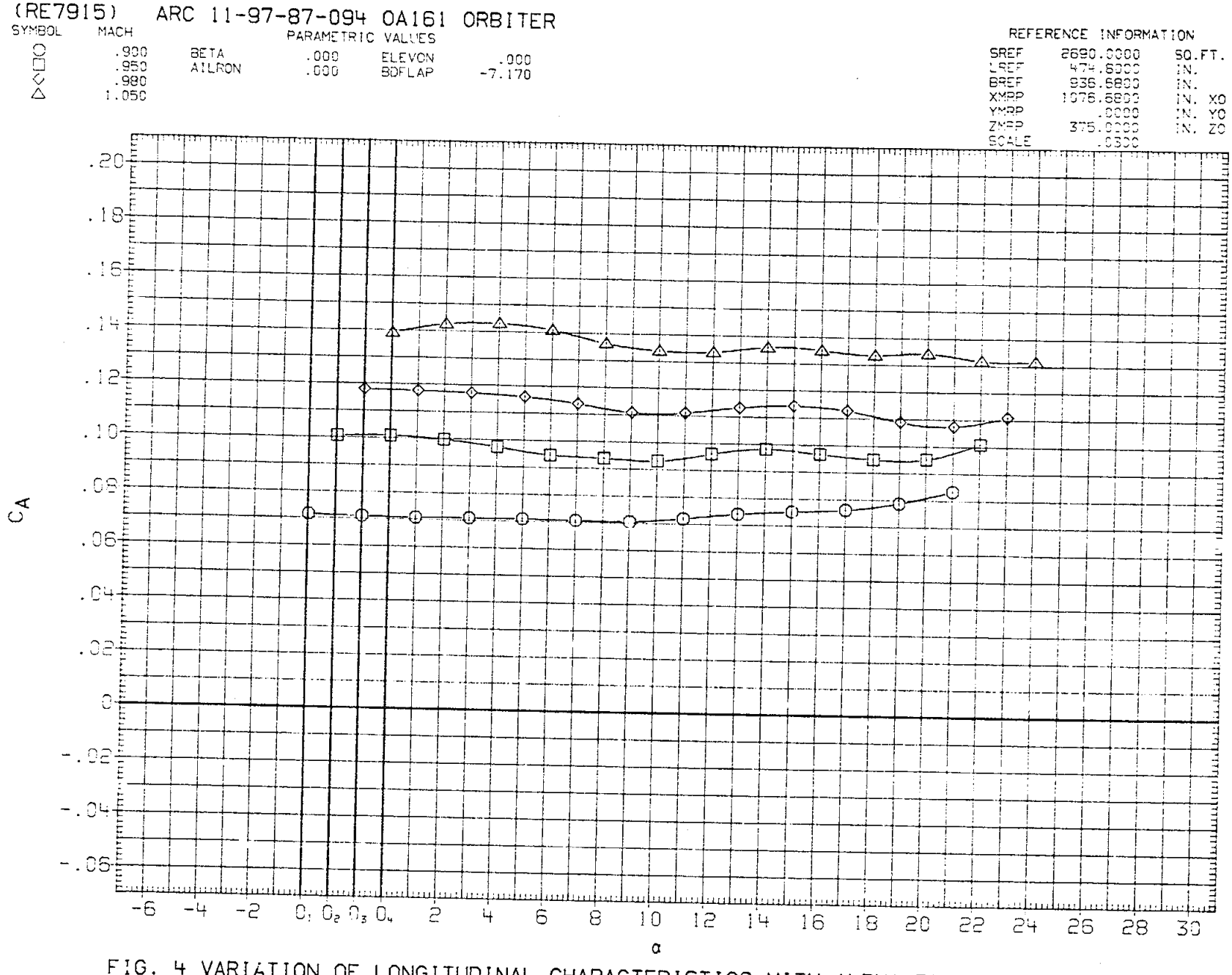


FIG. 4 VARIATION OF LONGITUDINAL CHARACTERISTICS WITH ALPHA FOR STANDARD ORBITER

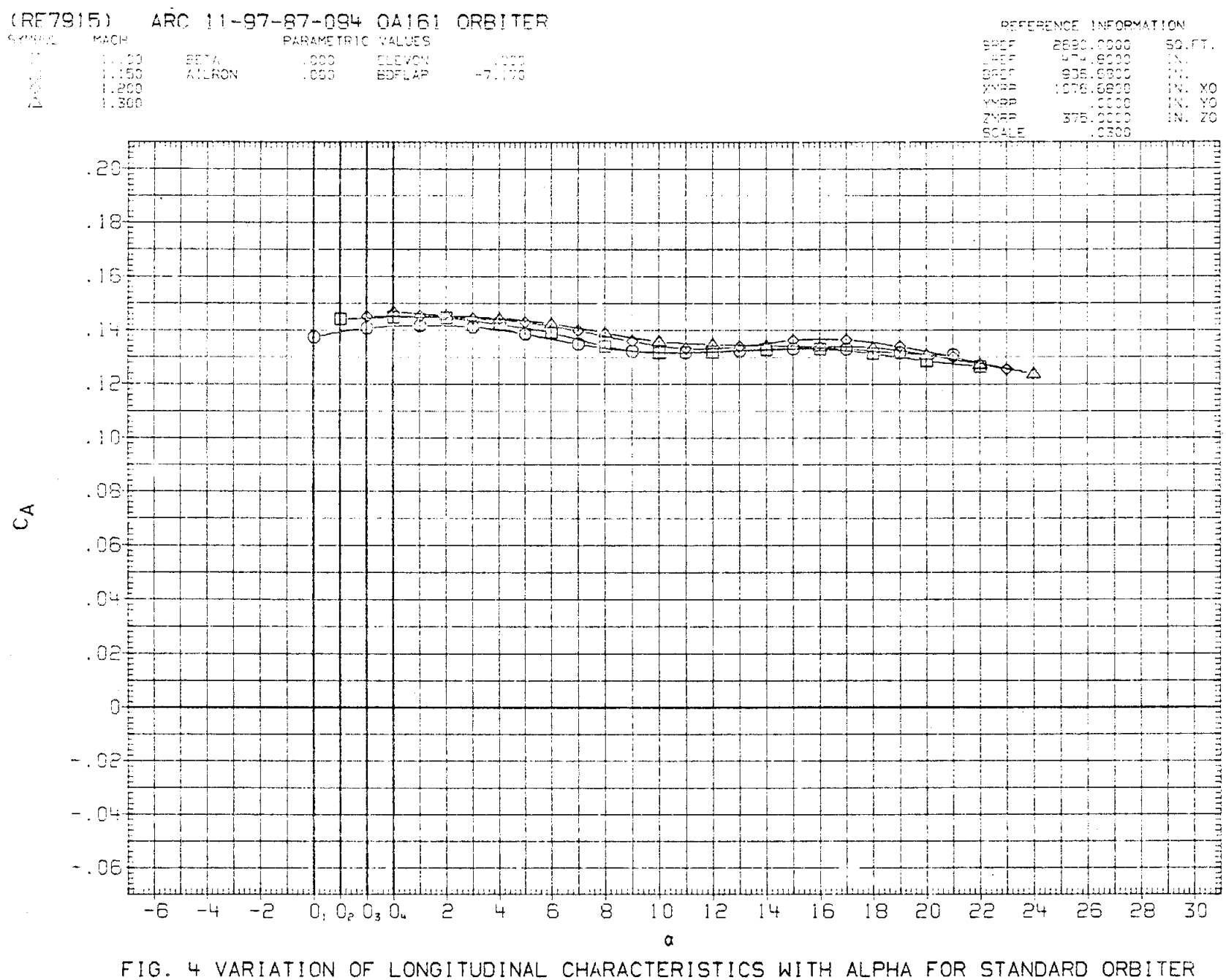


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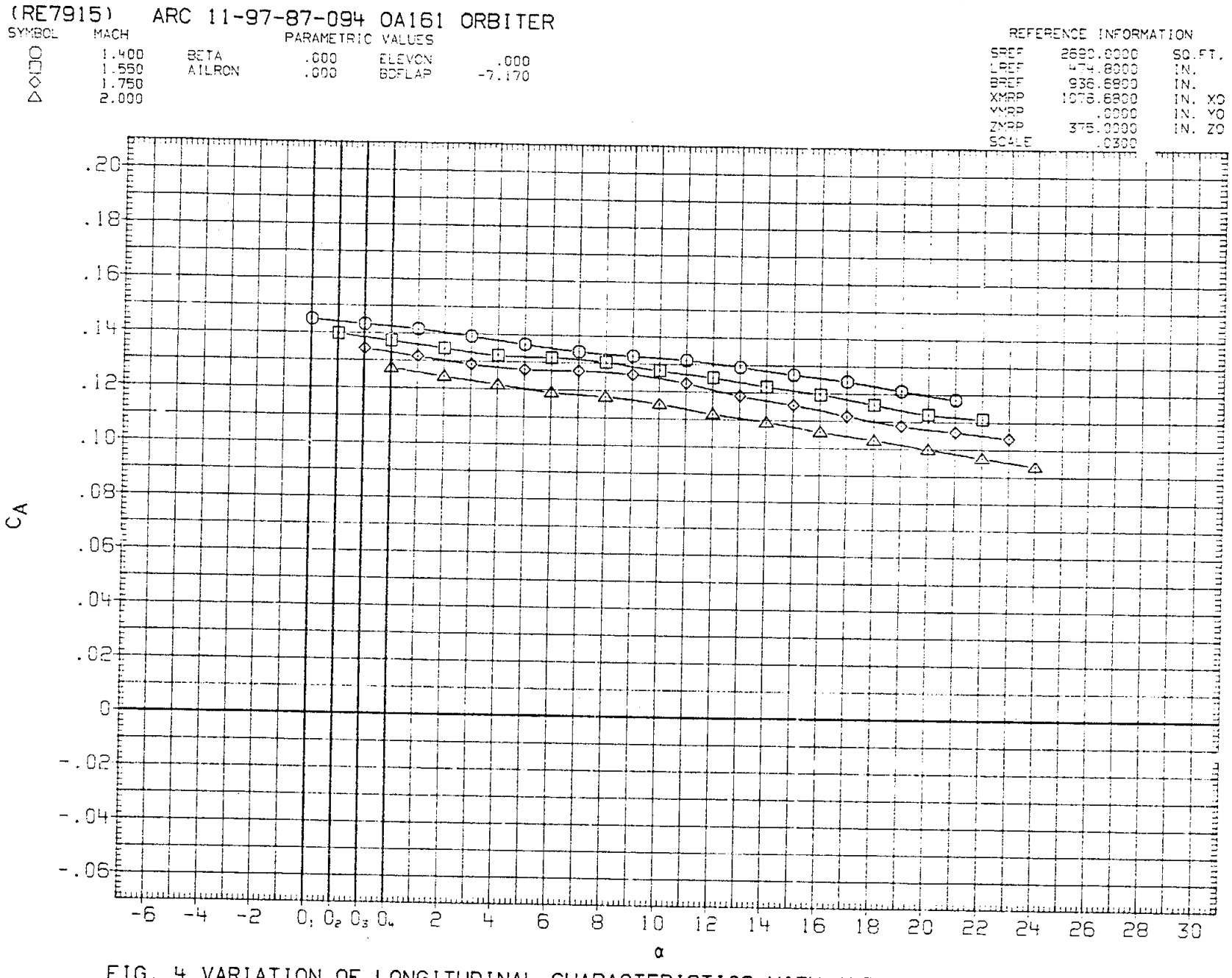


FIG. 4 VARIATION OF LONGITUDINAL CHARACTERISTICS WITH ALPHA FOR STANDARD ORBITER

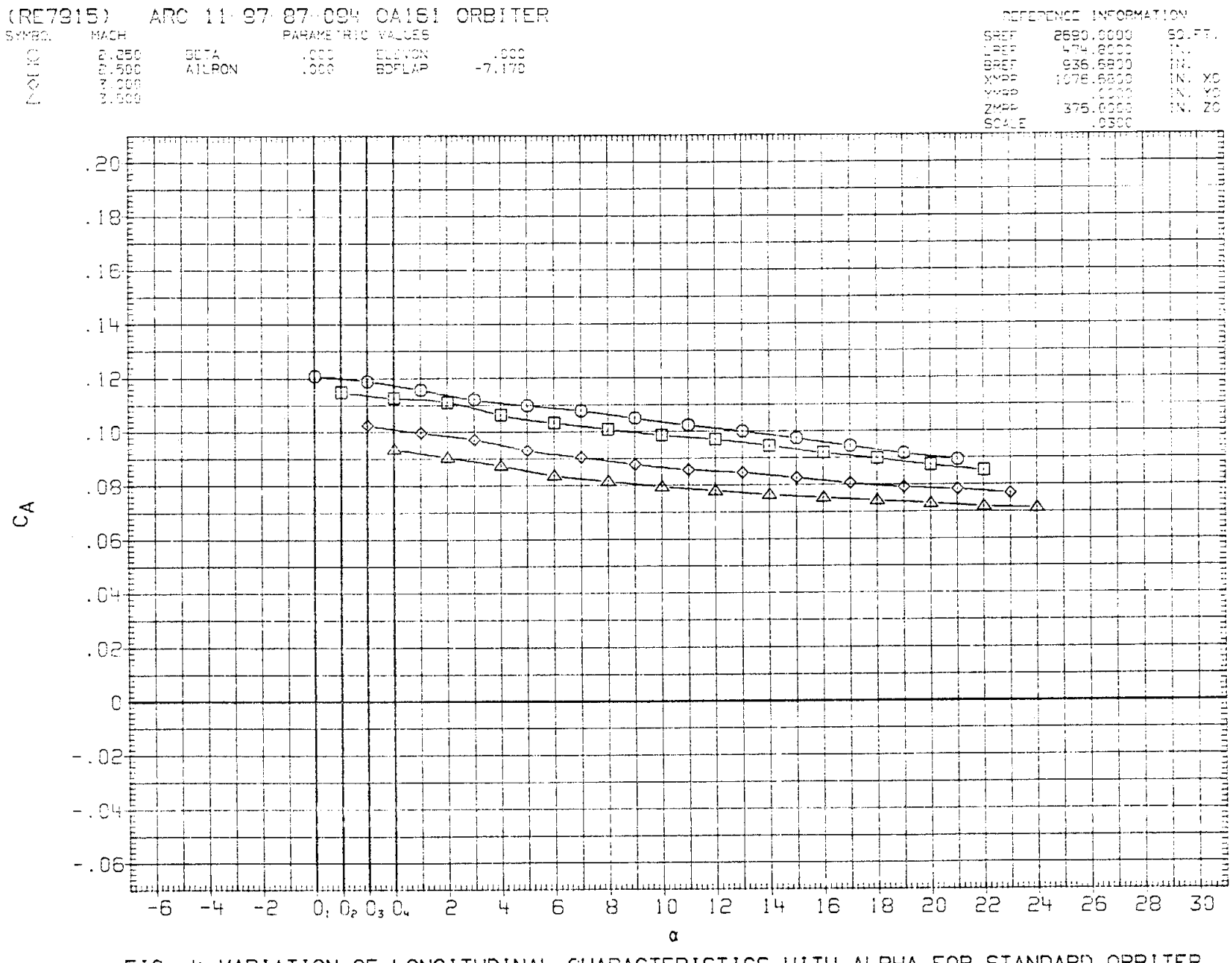


FIG. 4 VARIATION OF LONGITUDINAL CHARACTERISTICS WITH ALPHA FOR STANDARD ORBITER

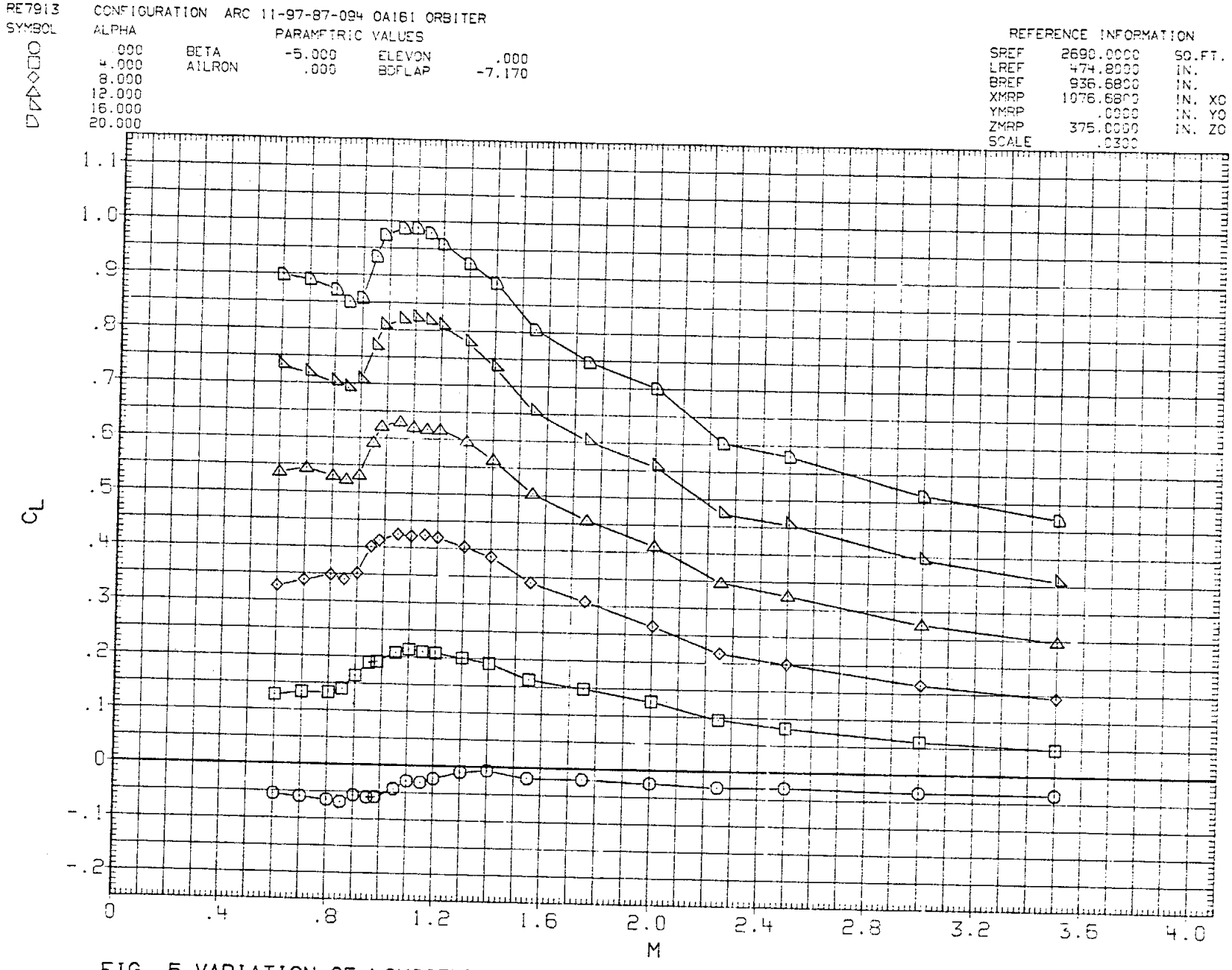


FIG. 5 VARIATION OF LONGITUDINAL CHARACTERISTICS WITH MACH NUMBER

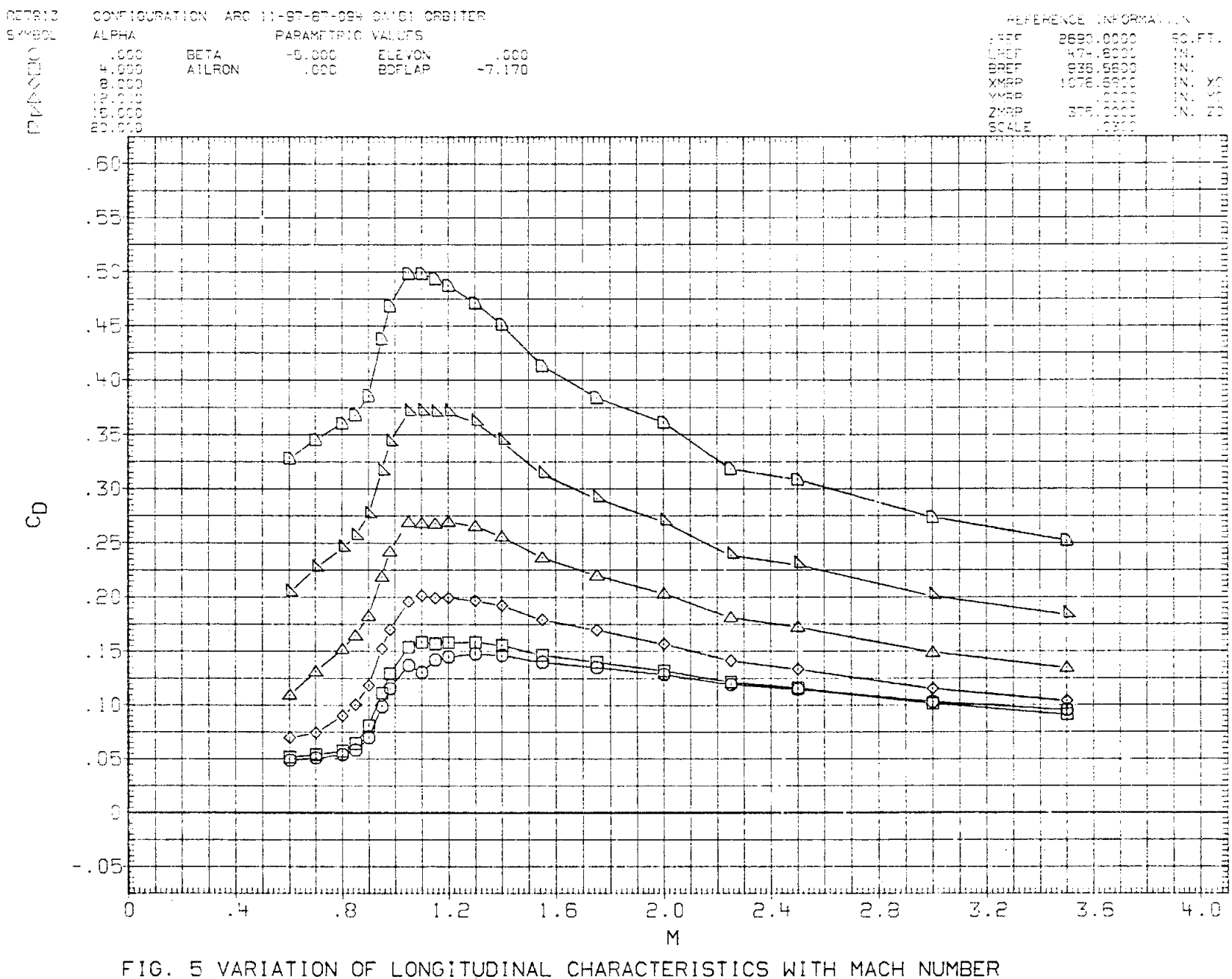


FIG. 5 VARIATION OF LONGITUDINAL CHARACTERISTICS WITH MACH NUMBER

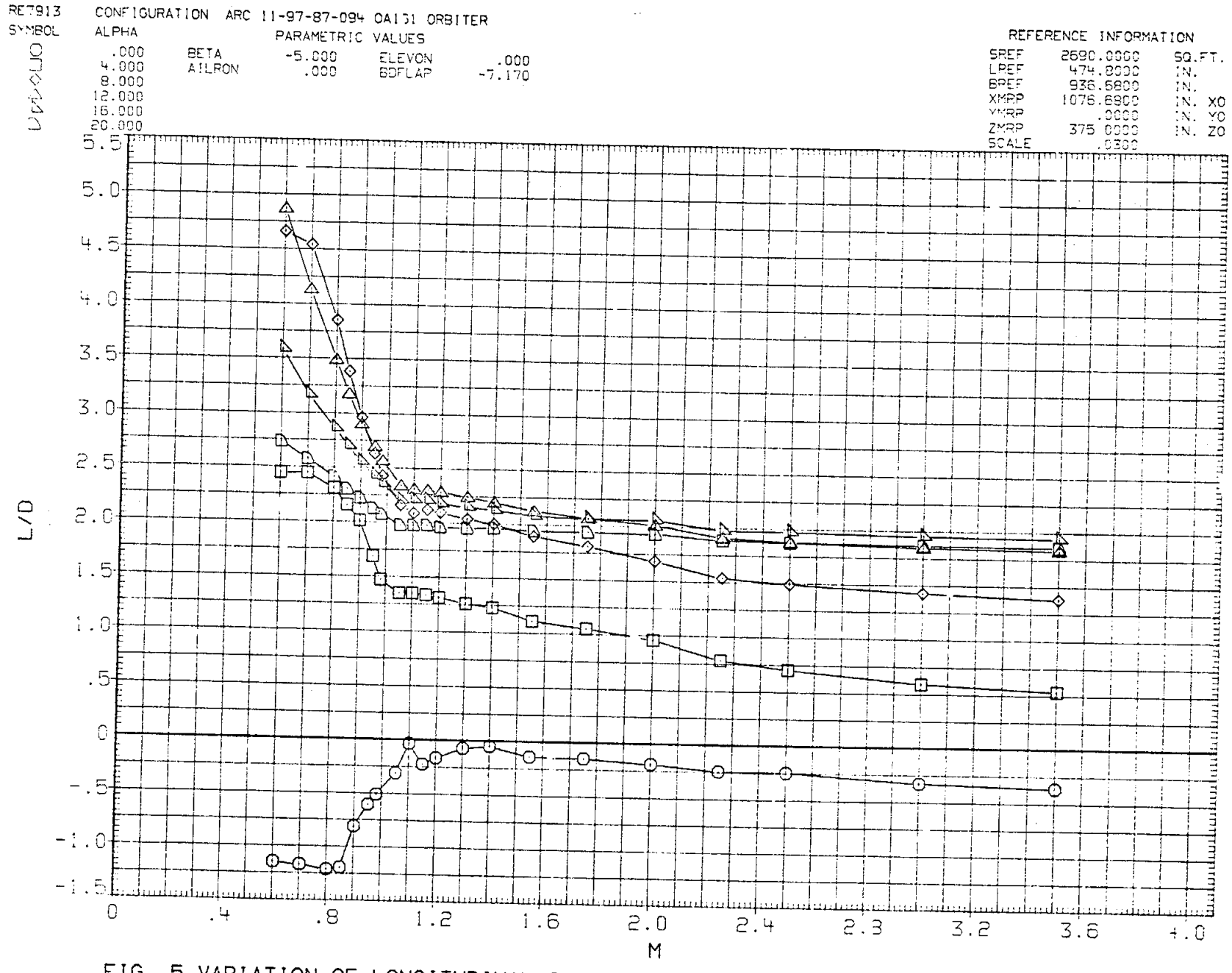


FIG. 5 VARIATION OF LONGITUDINAL CHARACTERISTICS WITH MACH NUMBER

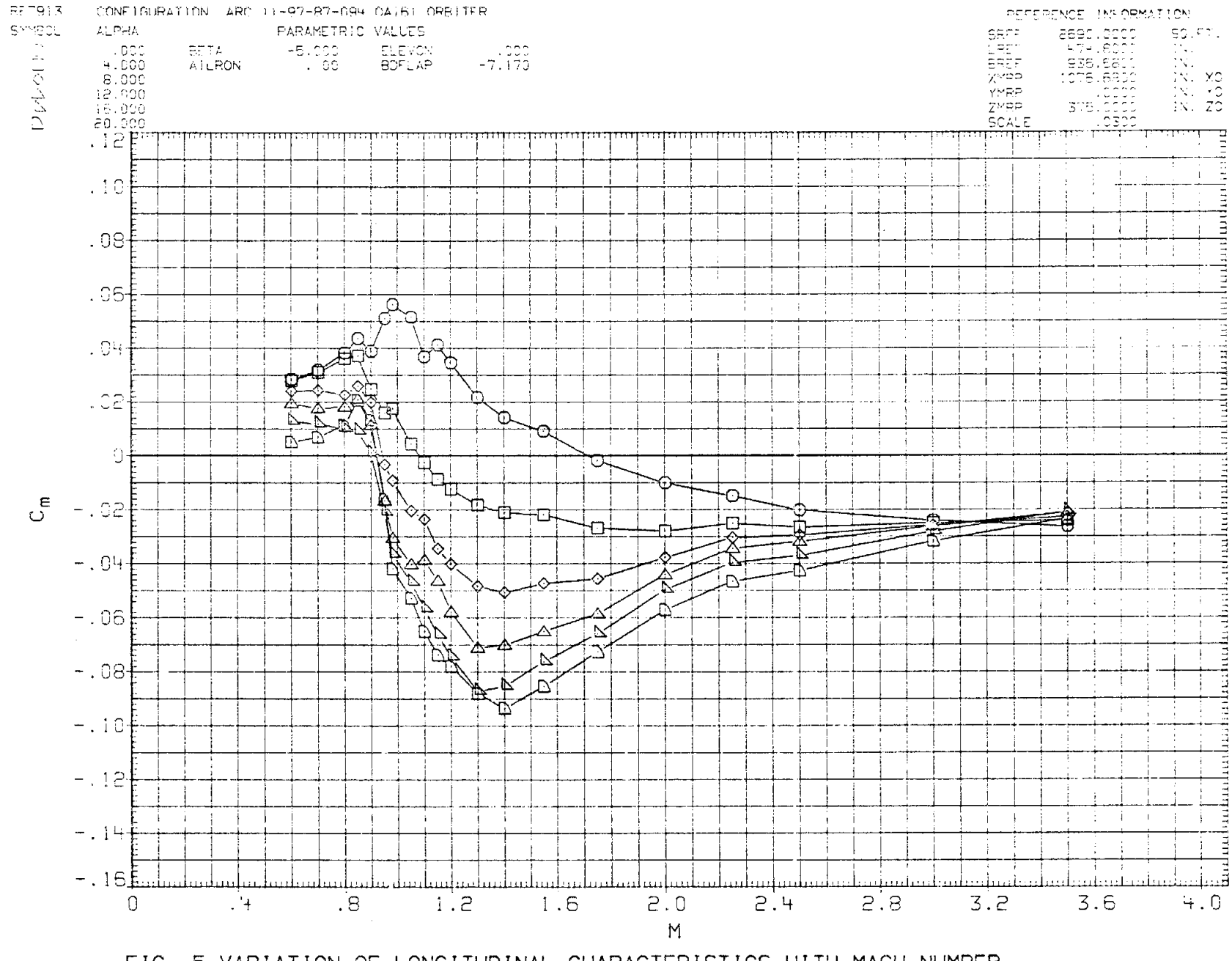


FIG. 5 VARIATION OF LONGITUDINAL CHARACTERISTICS WITH MACH NUMBER

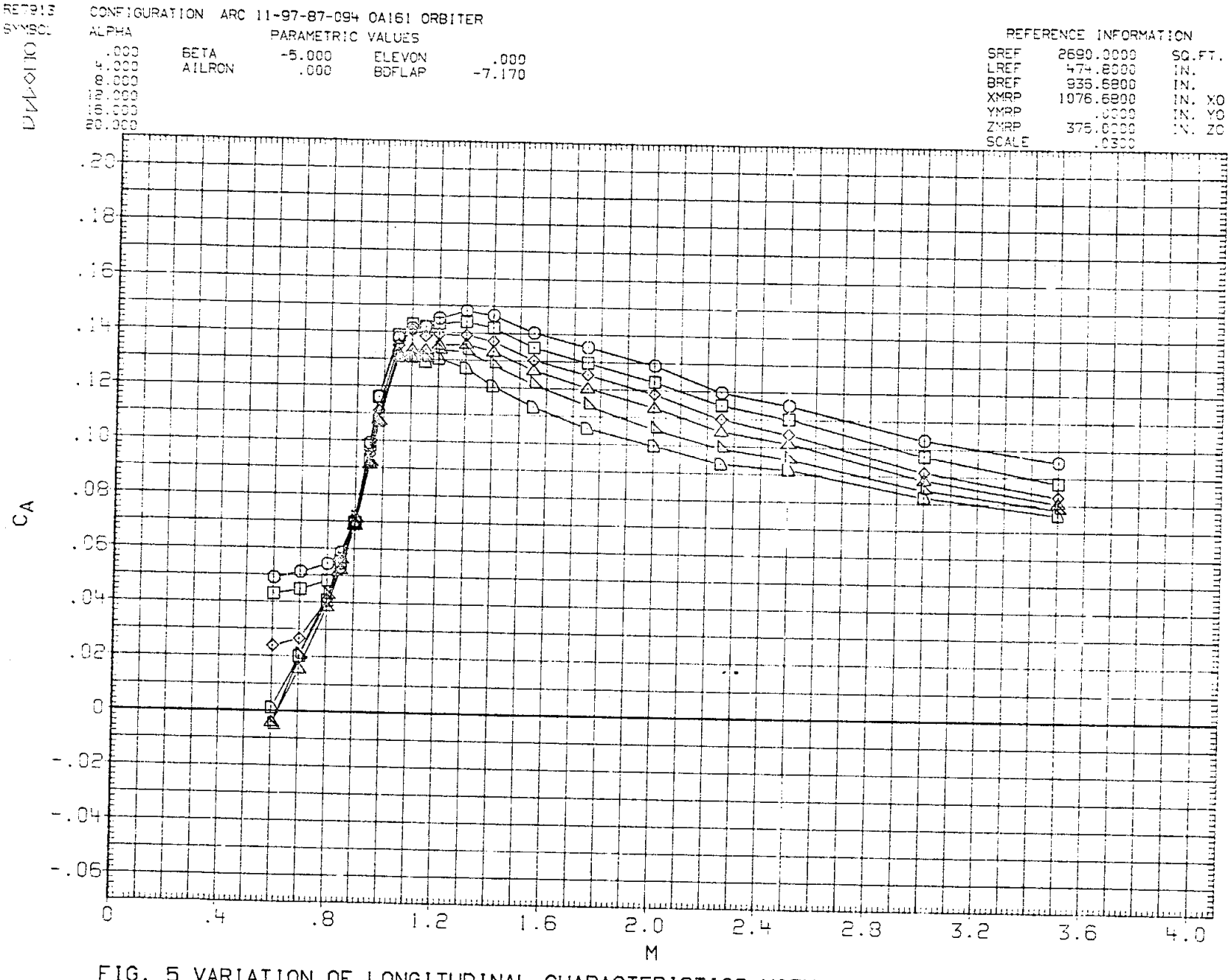


FIG. 5 VARIATION OF LONGITUDINAL CHARACTERISTICS WITH MACH NUMBER

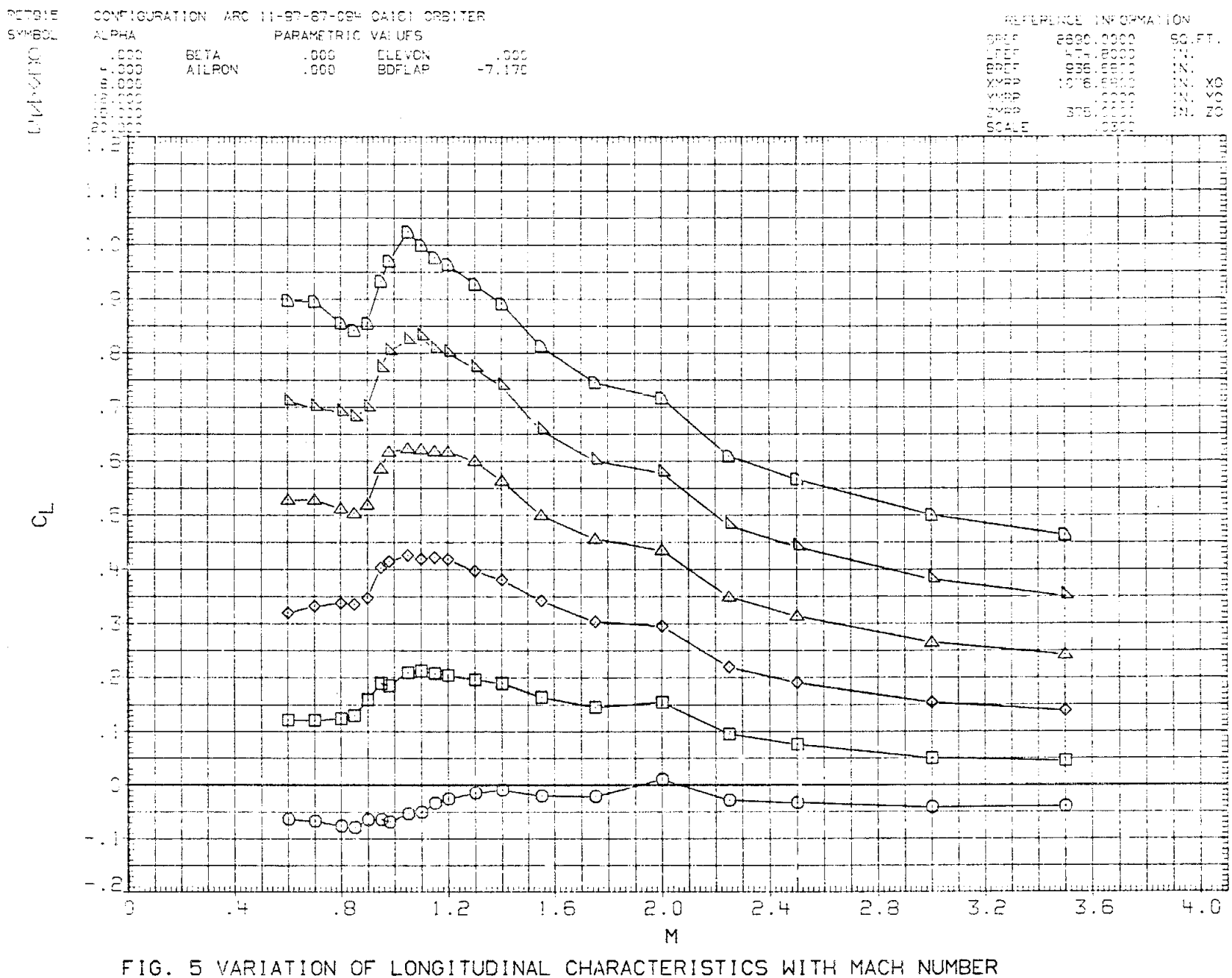


FIG. 5 VARIATION OF LONGITUDINAL CHARACTERISTICS WITH MACH NUMBER

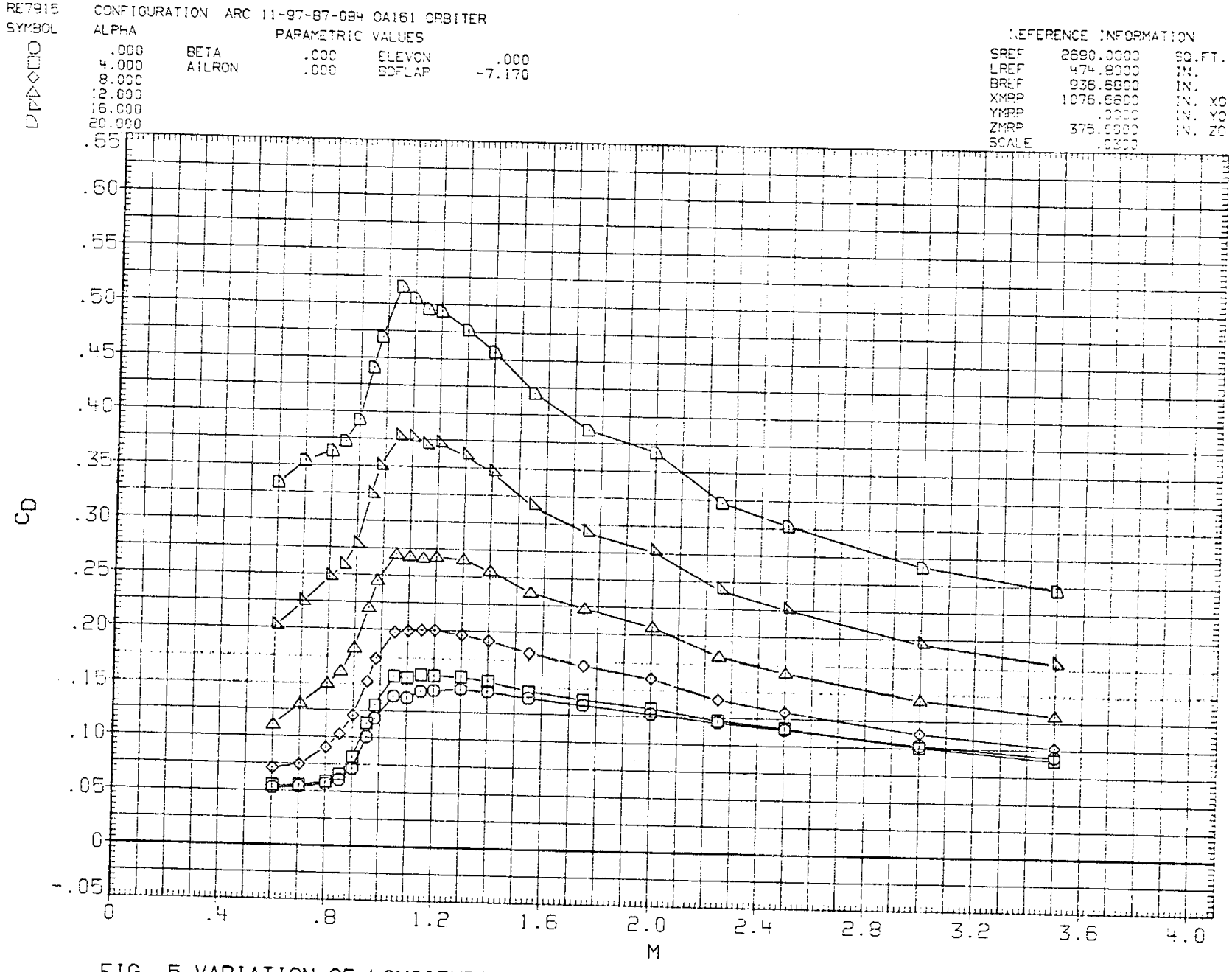


FIG. 5 VARIATION OF LONGITUDINAL CHARACTERISTICS WITH MACH NUMBER

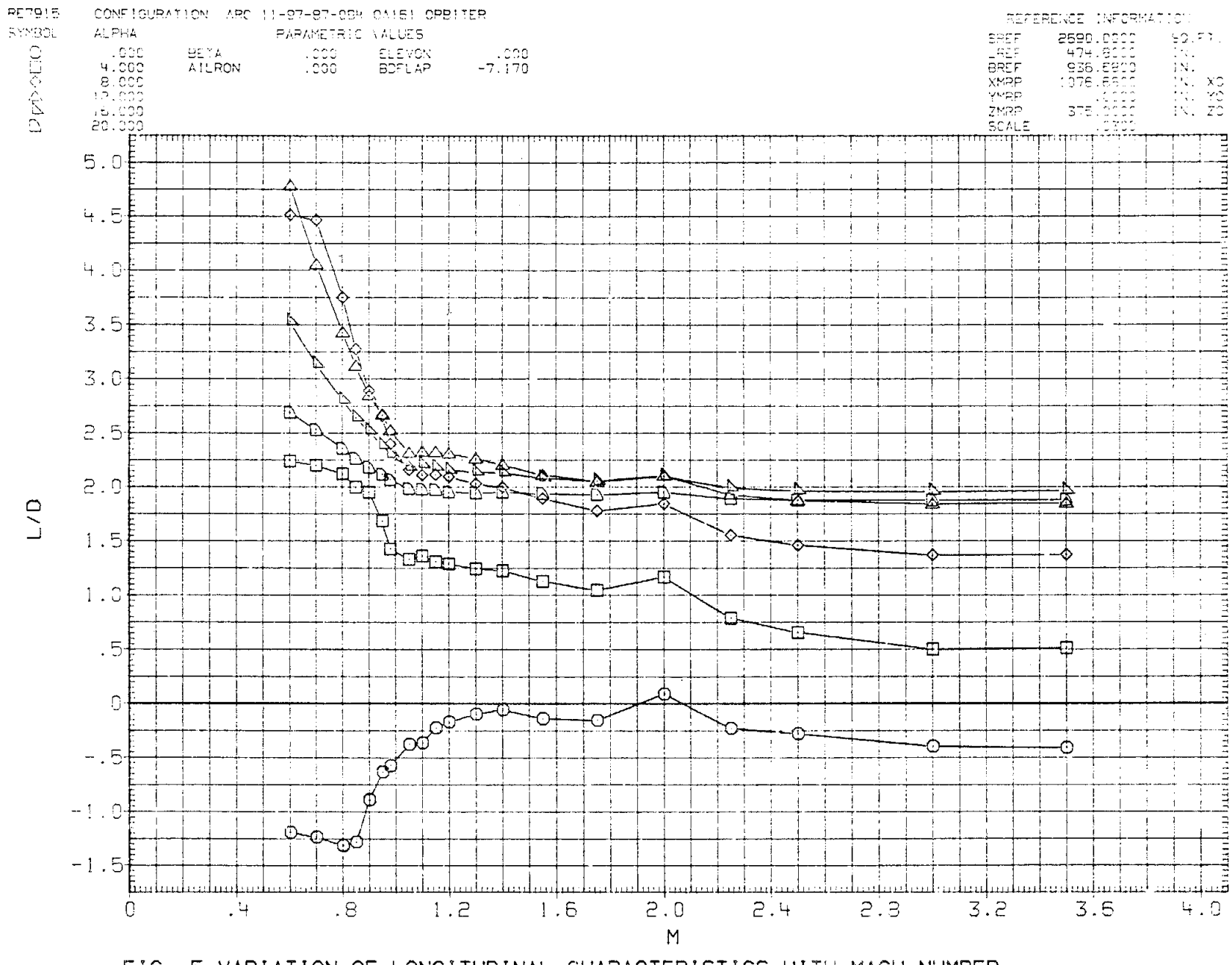


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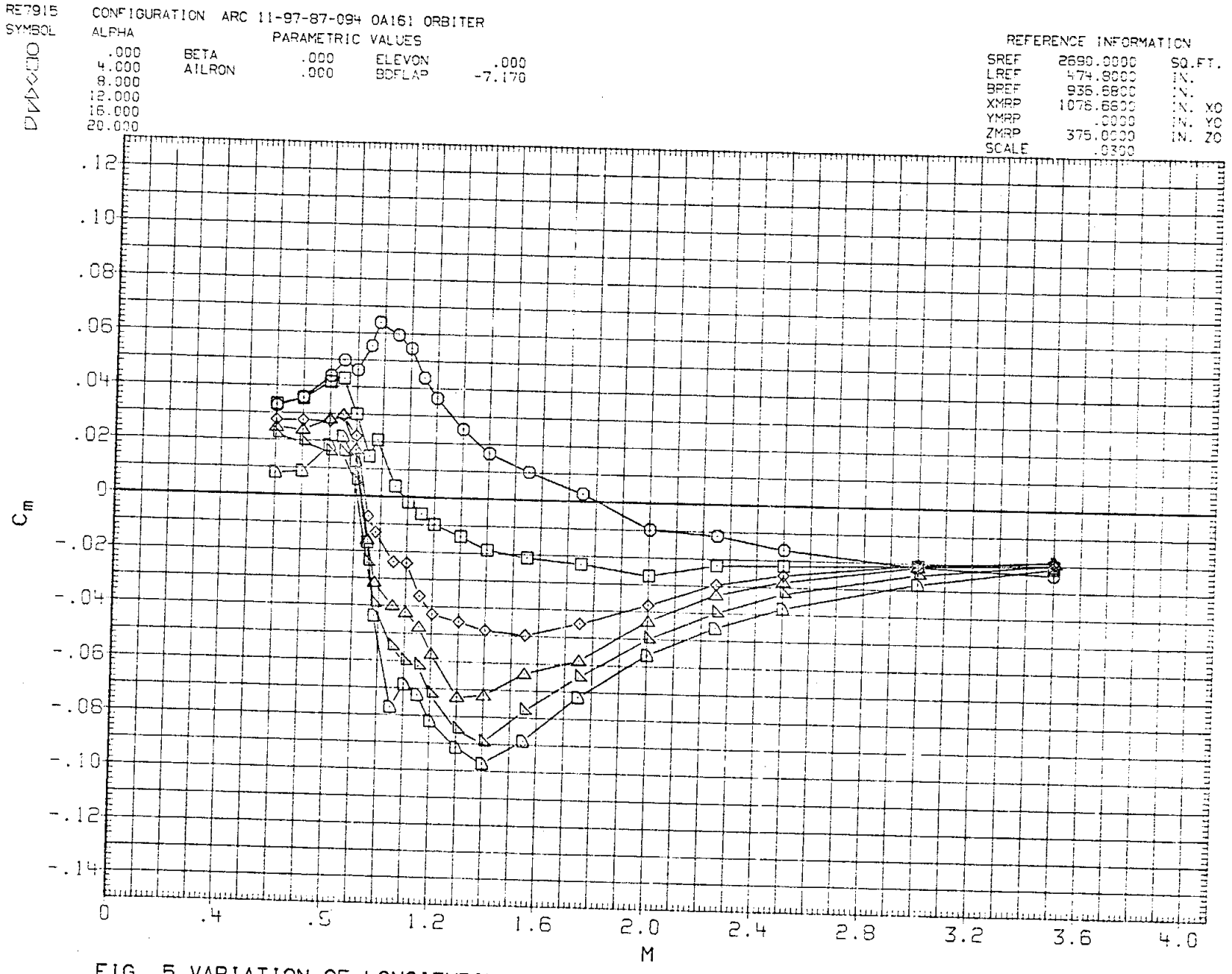


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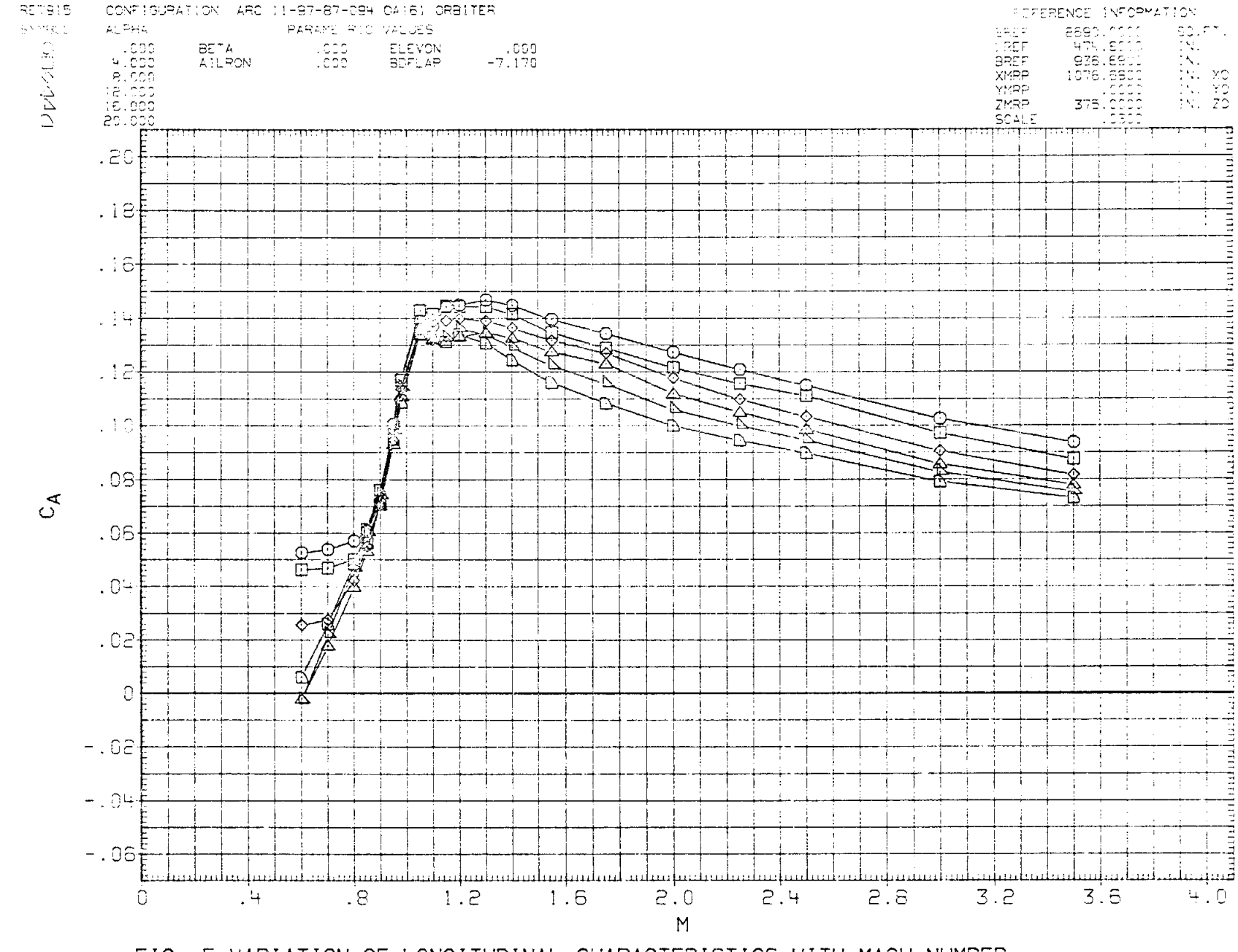


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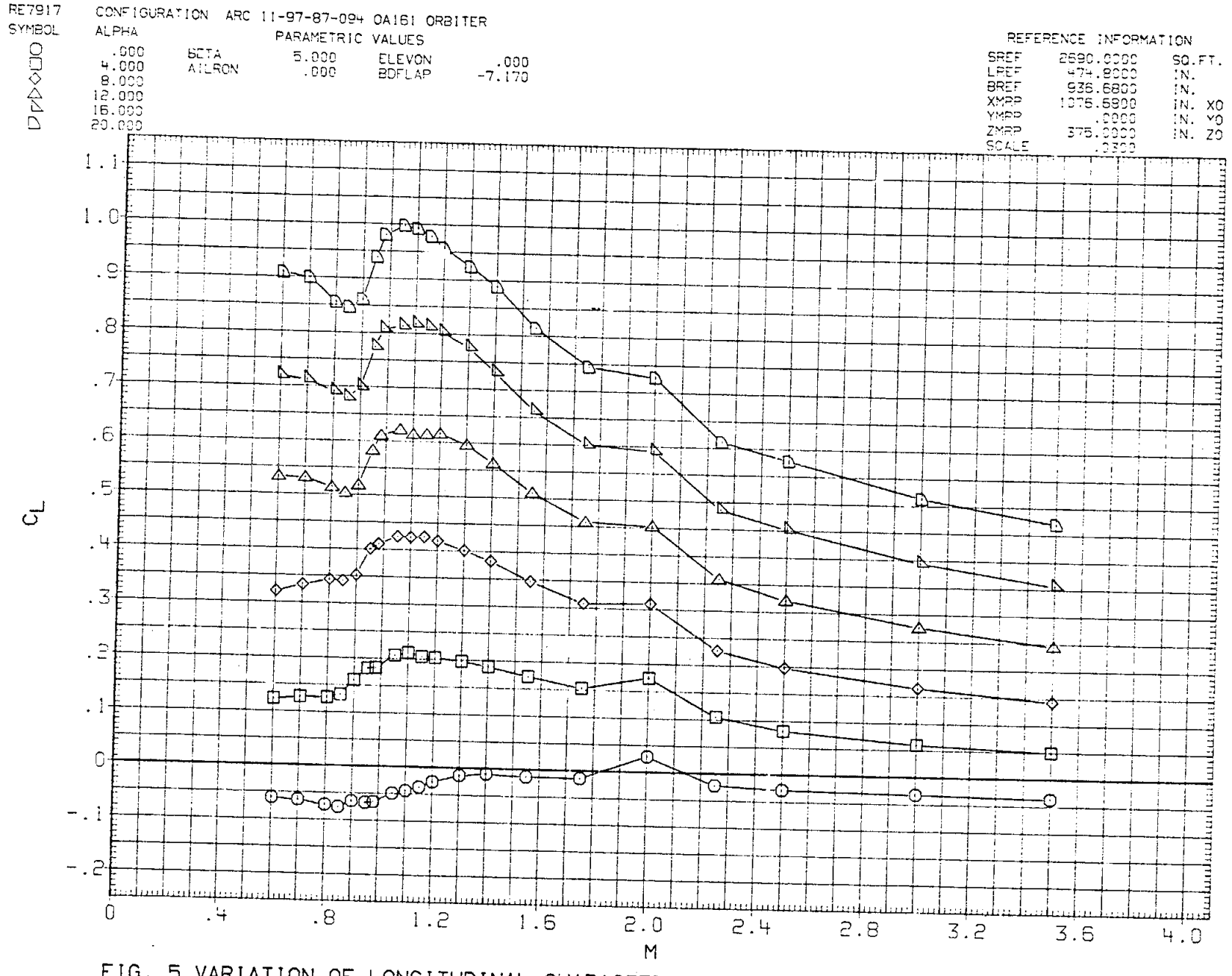


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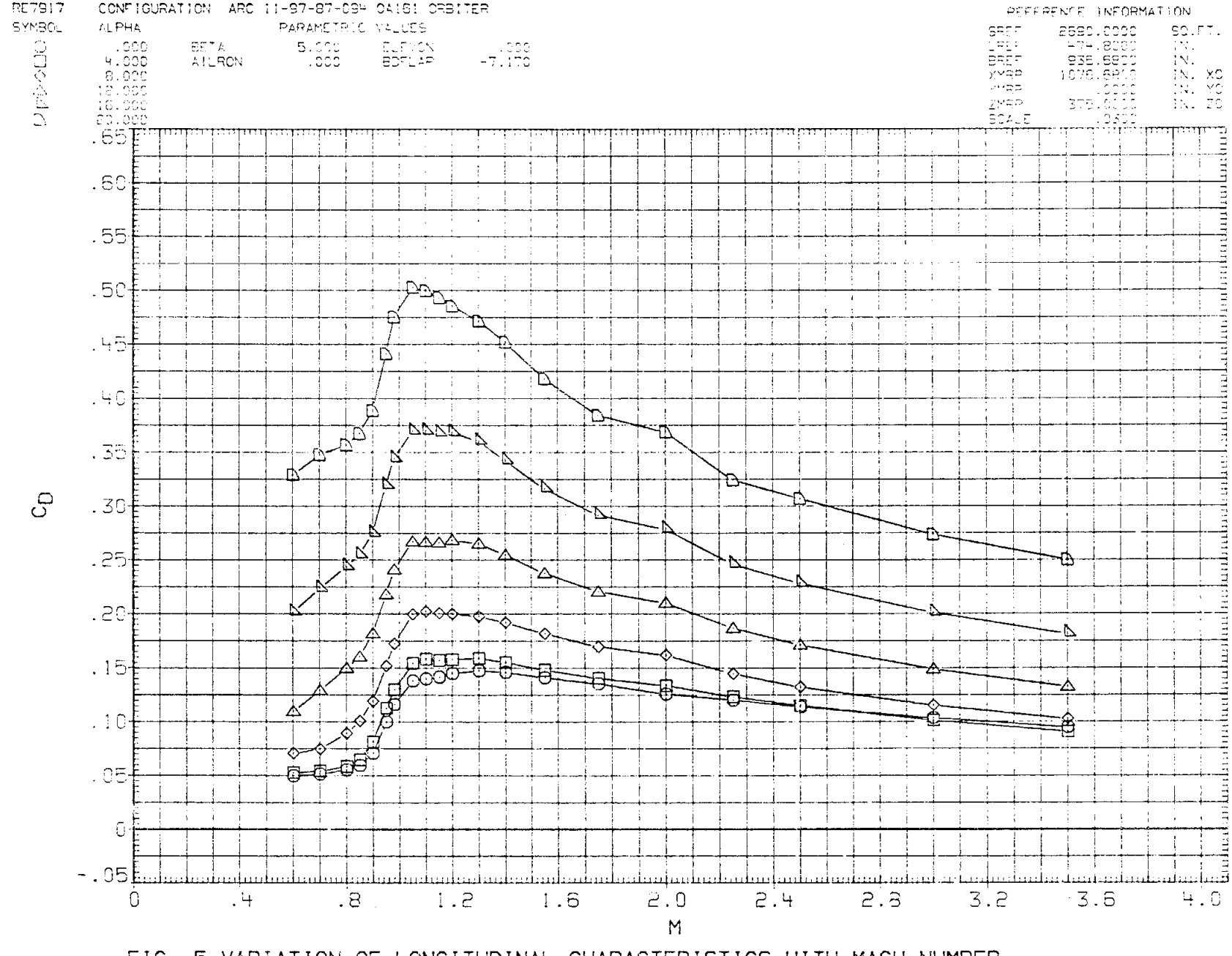


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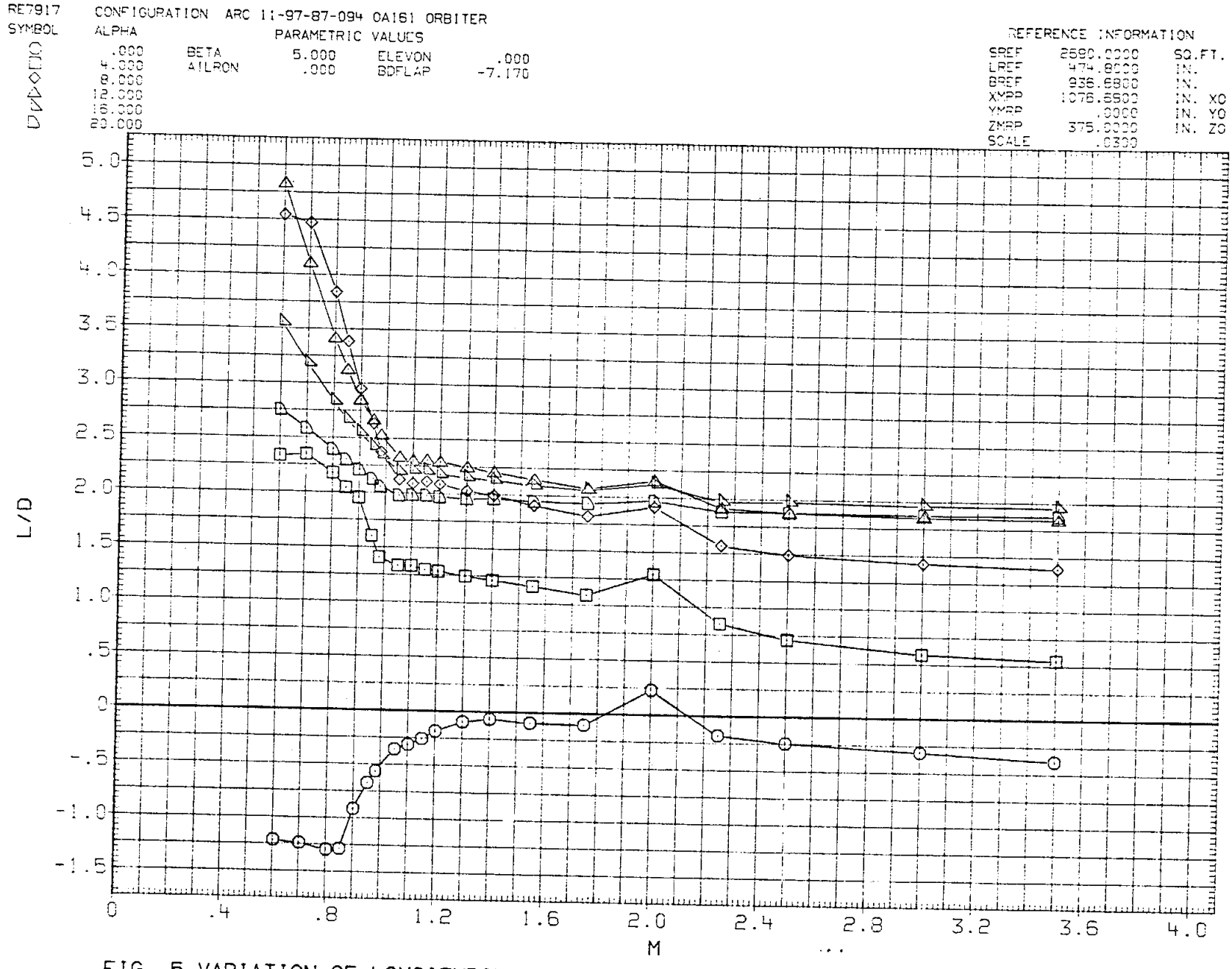


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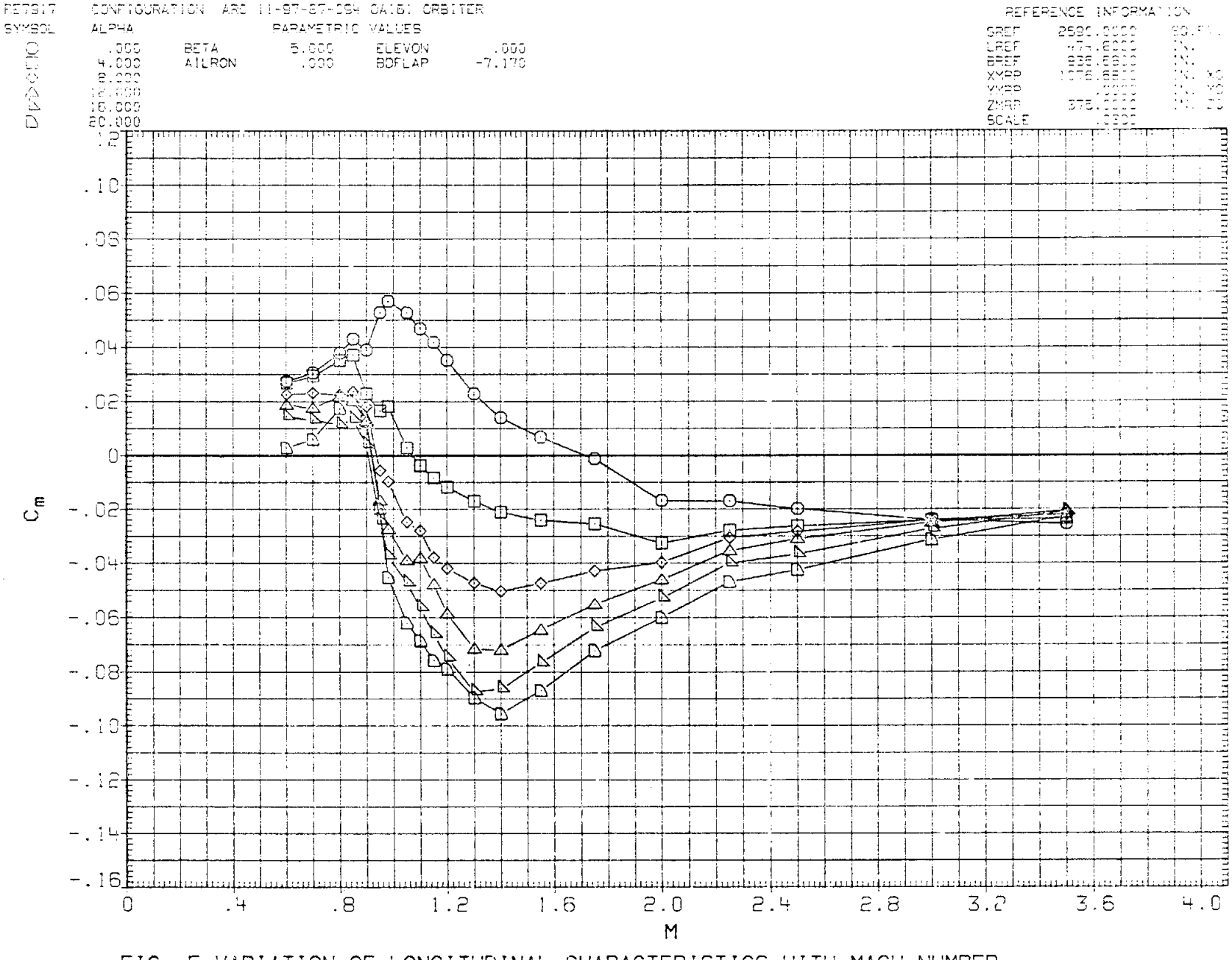


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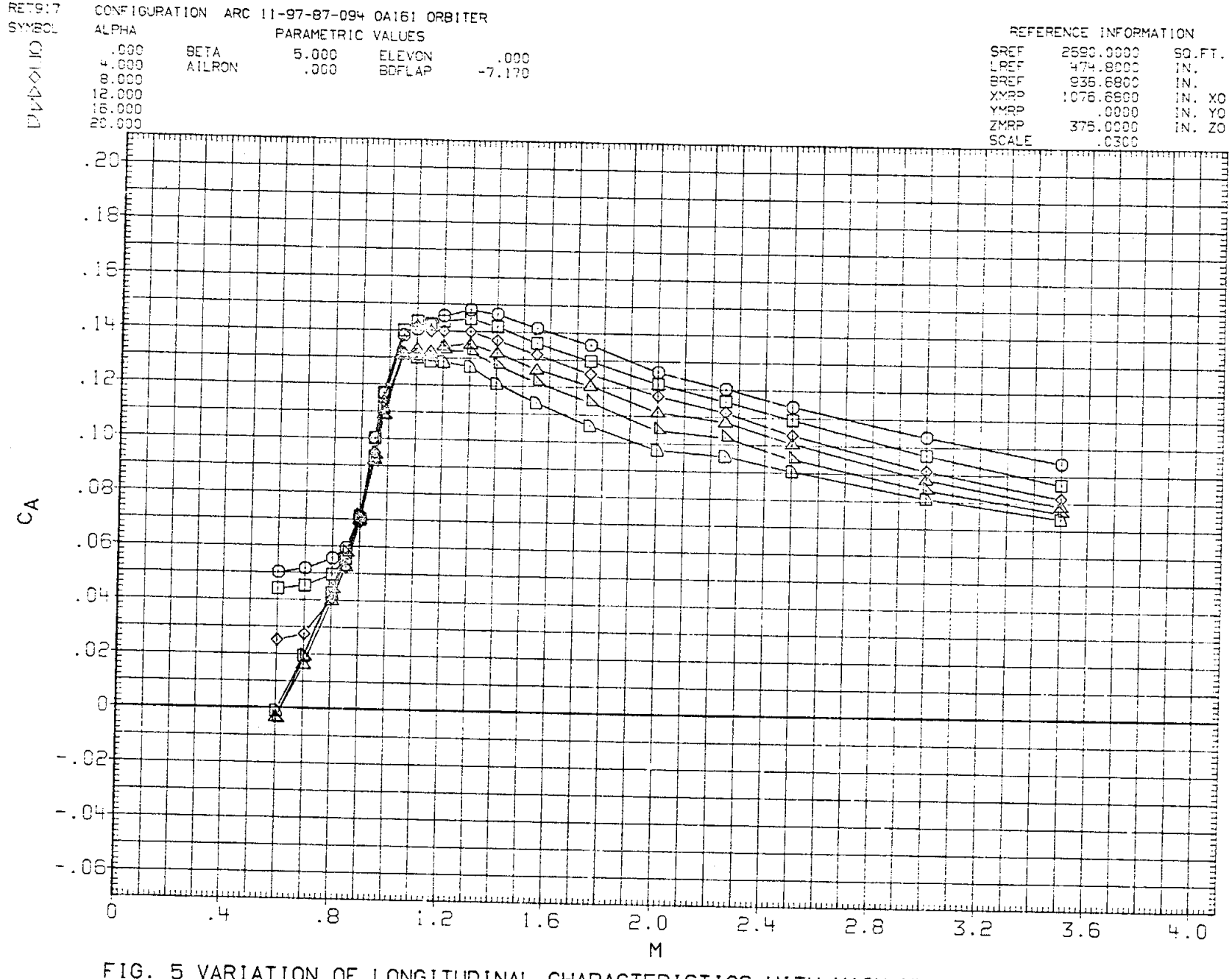


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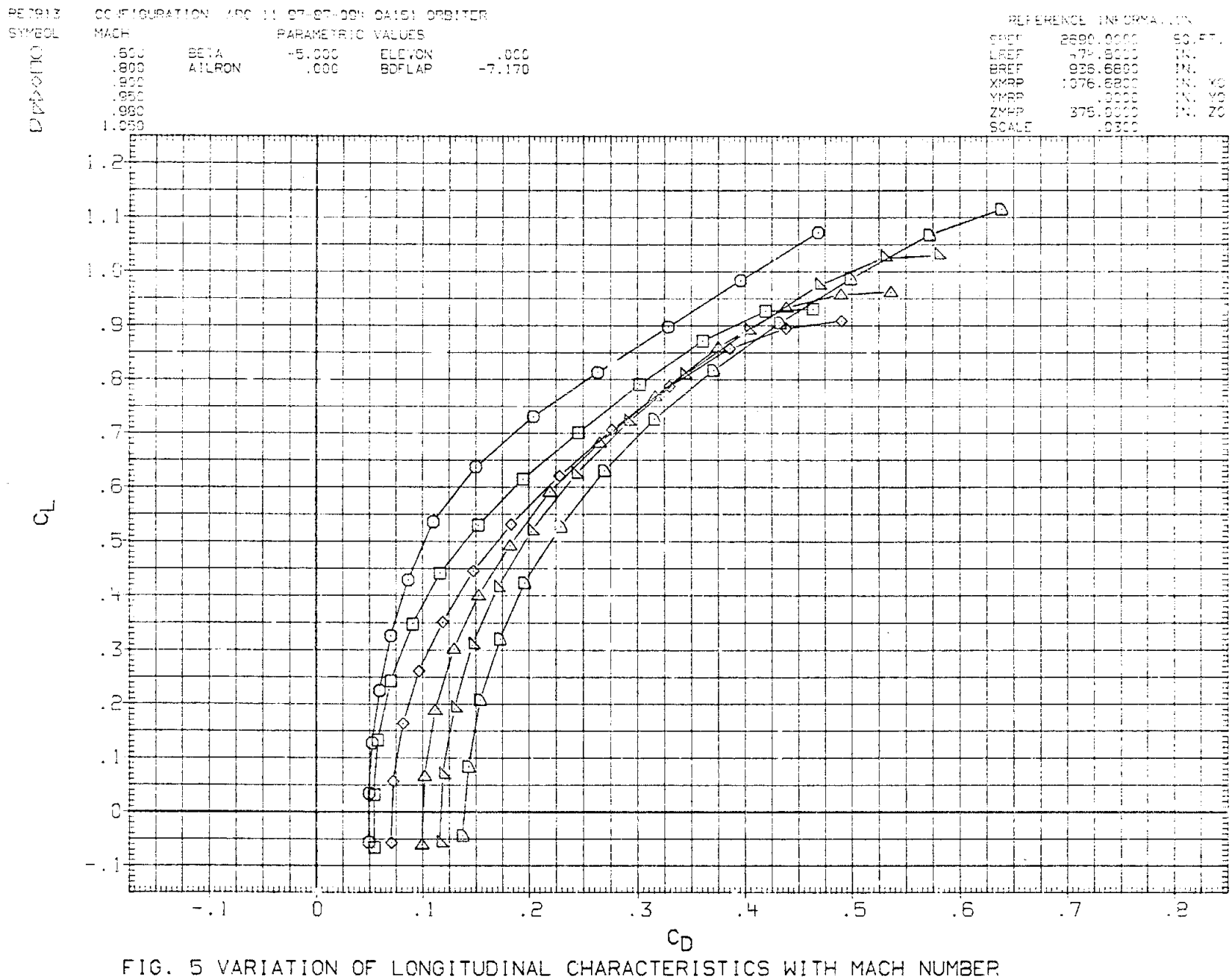


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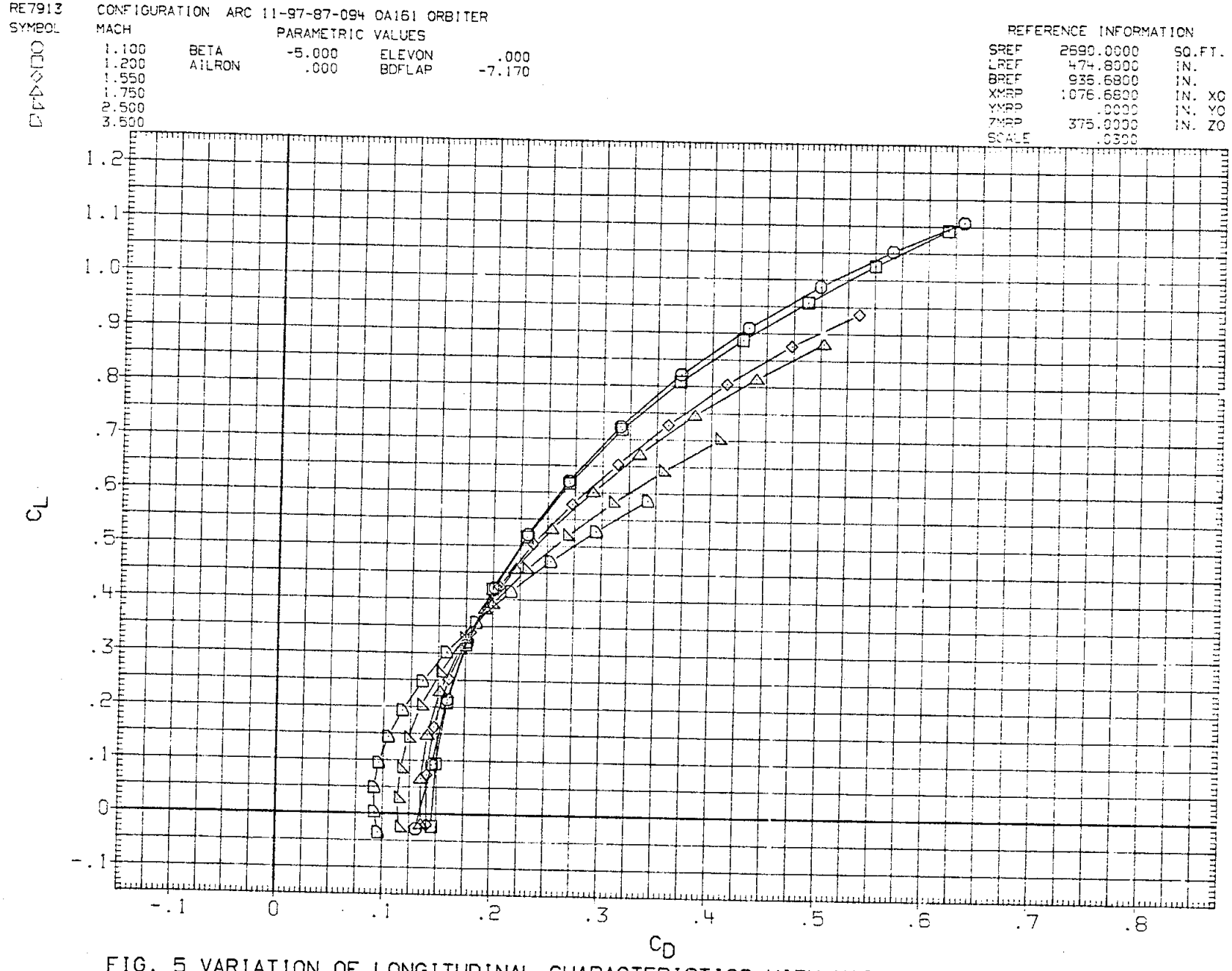


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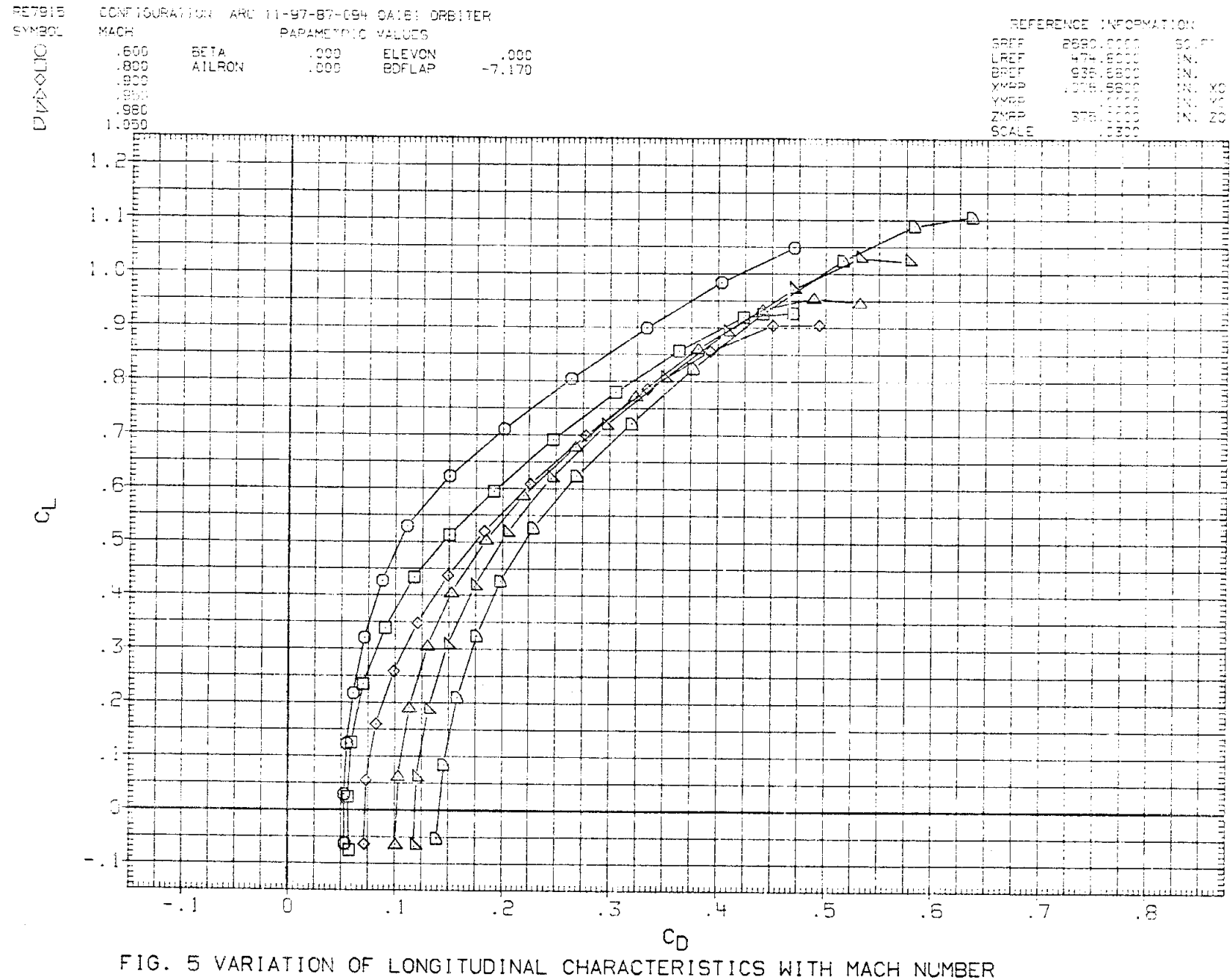


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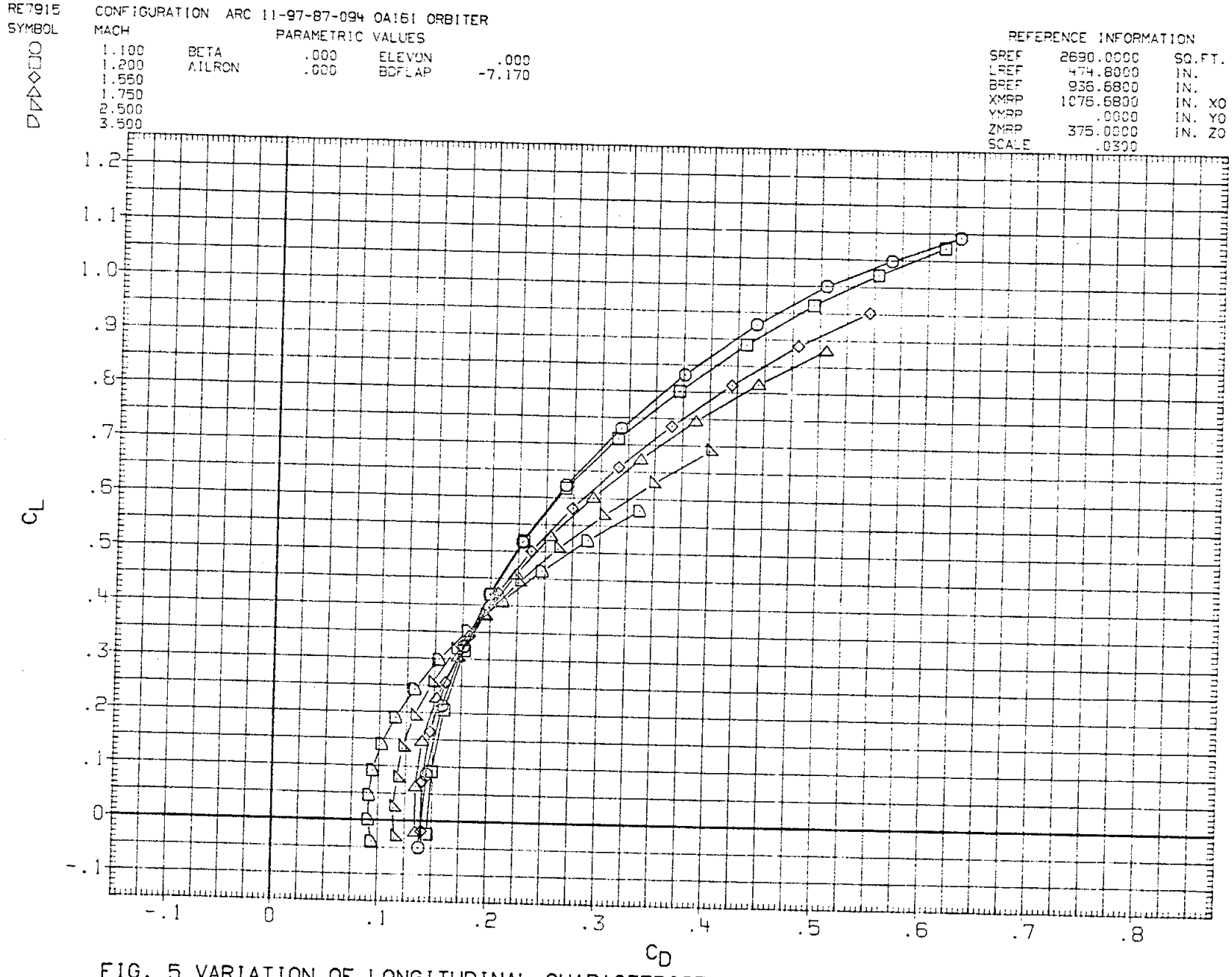


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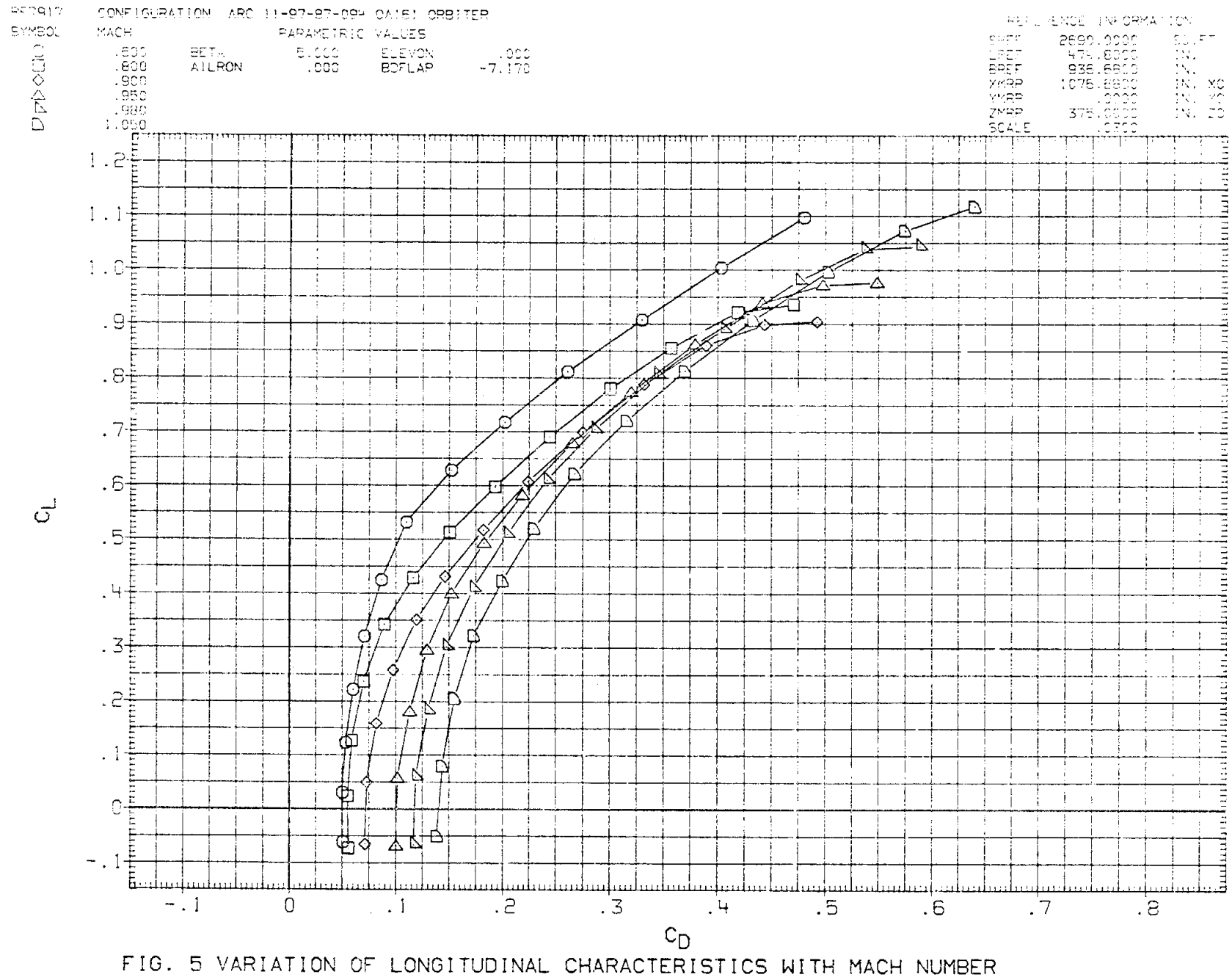


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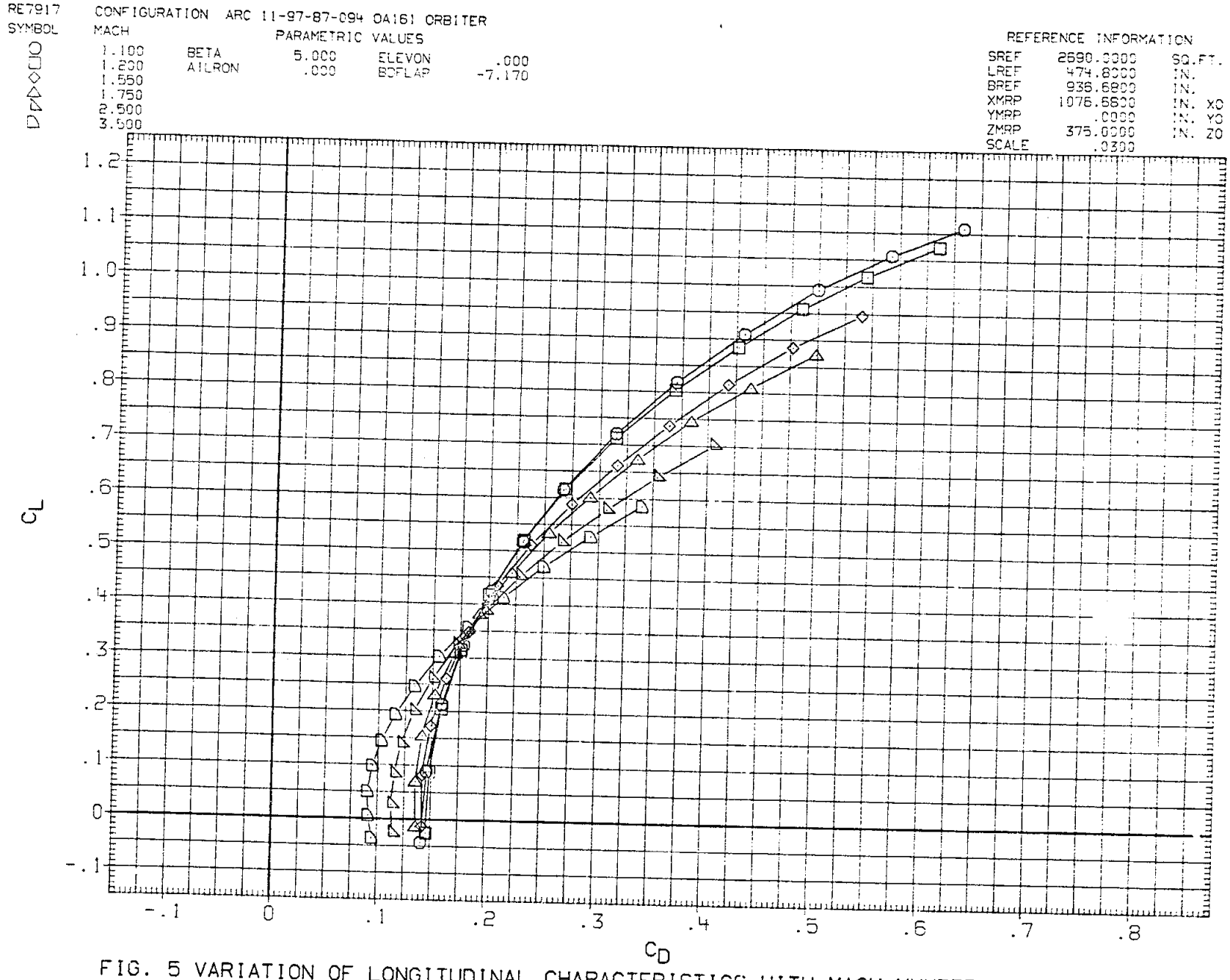


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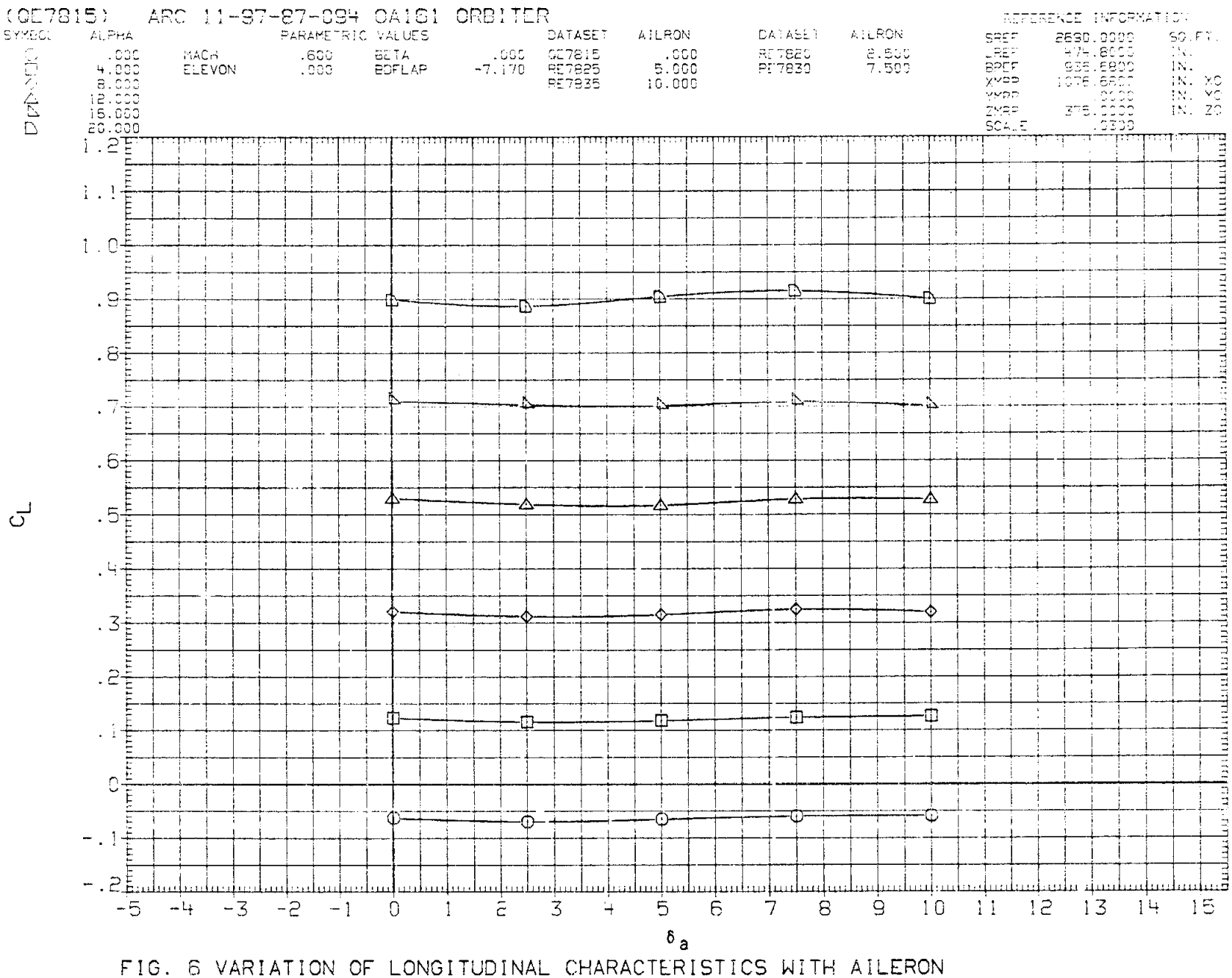


FIG. 6 VARIATION OF LONGITUDINAL CHARACTERISTICS WITH AILERON

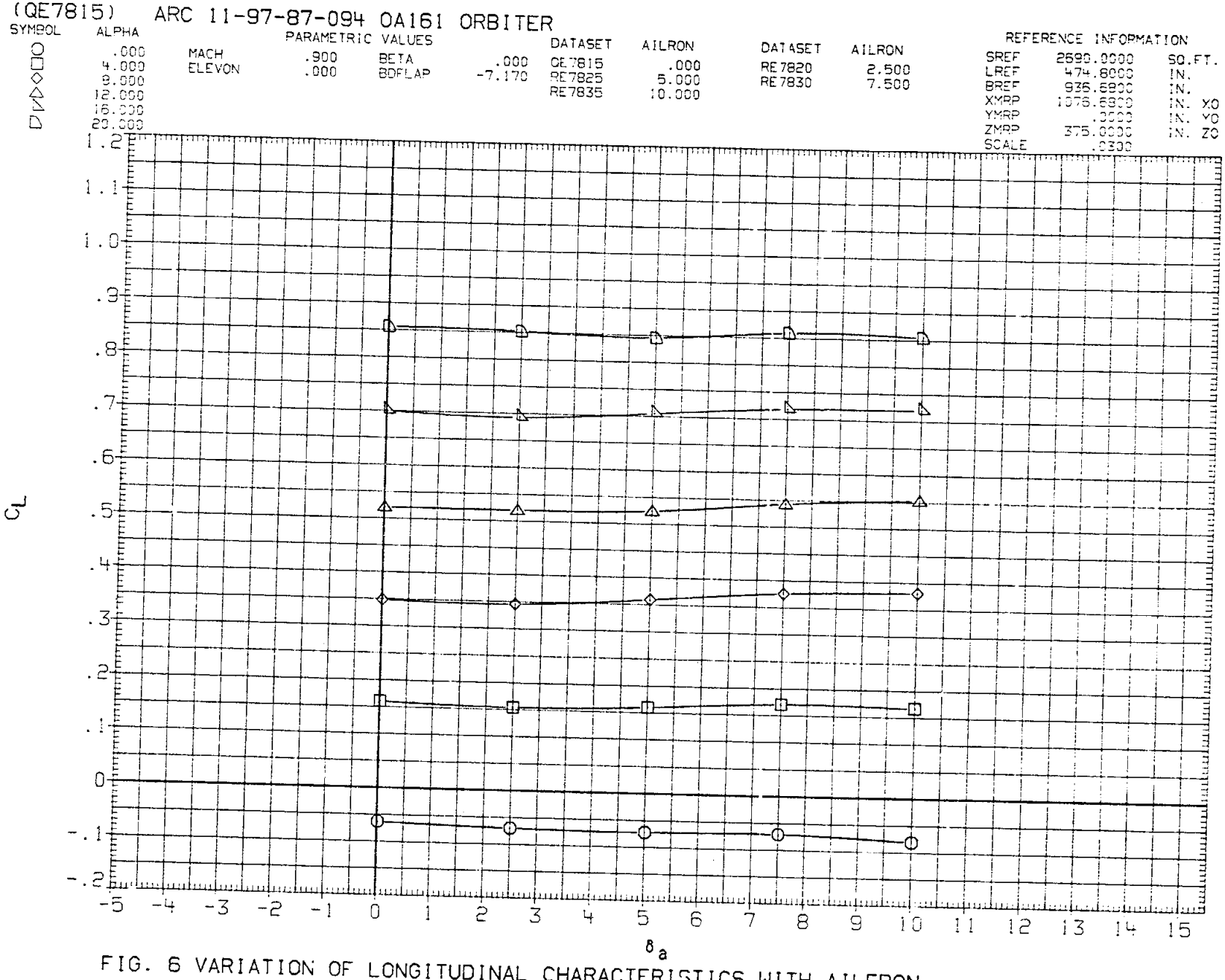


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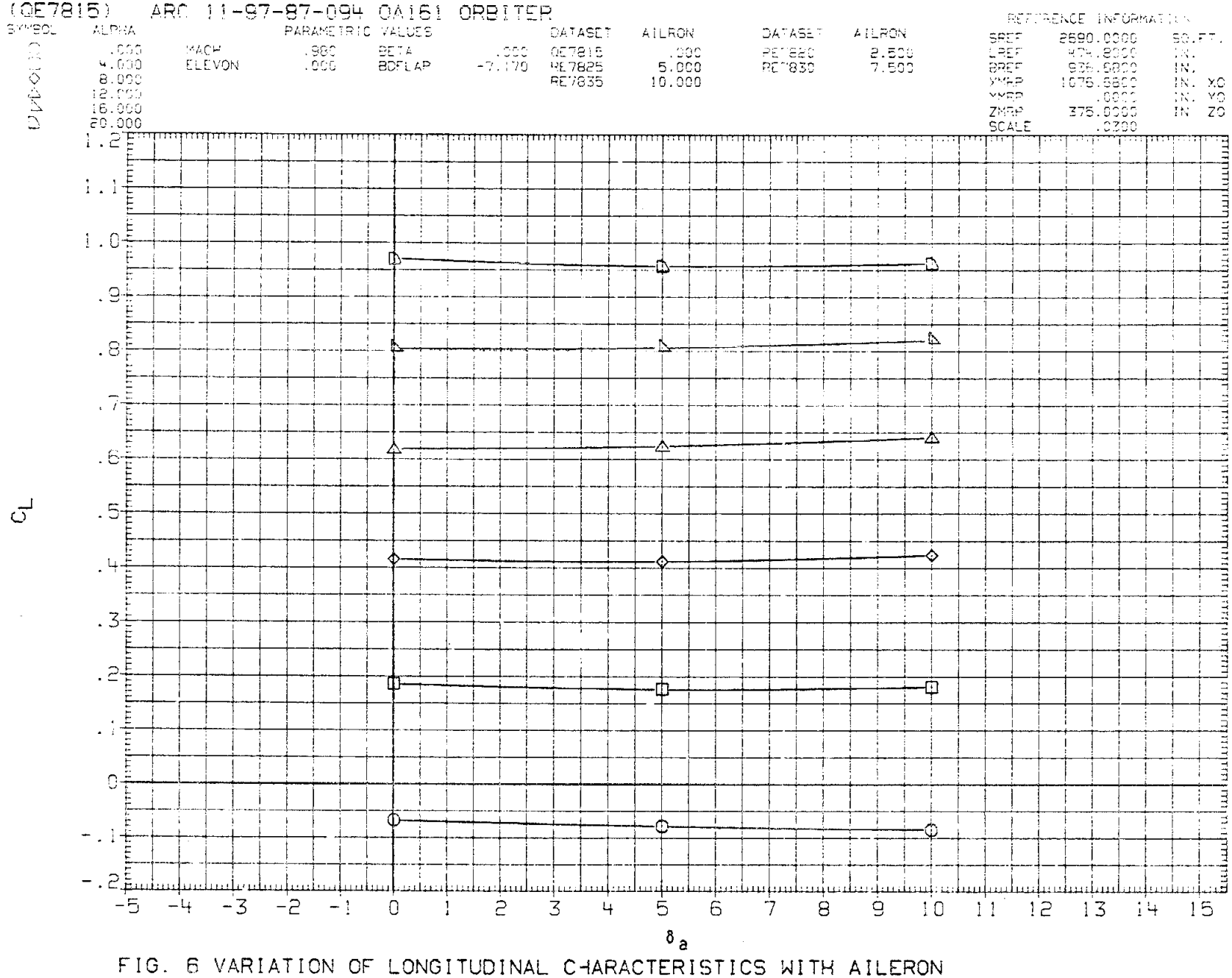


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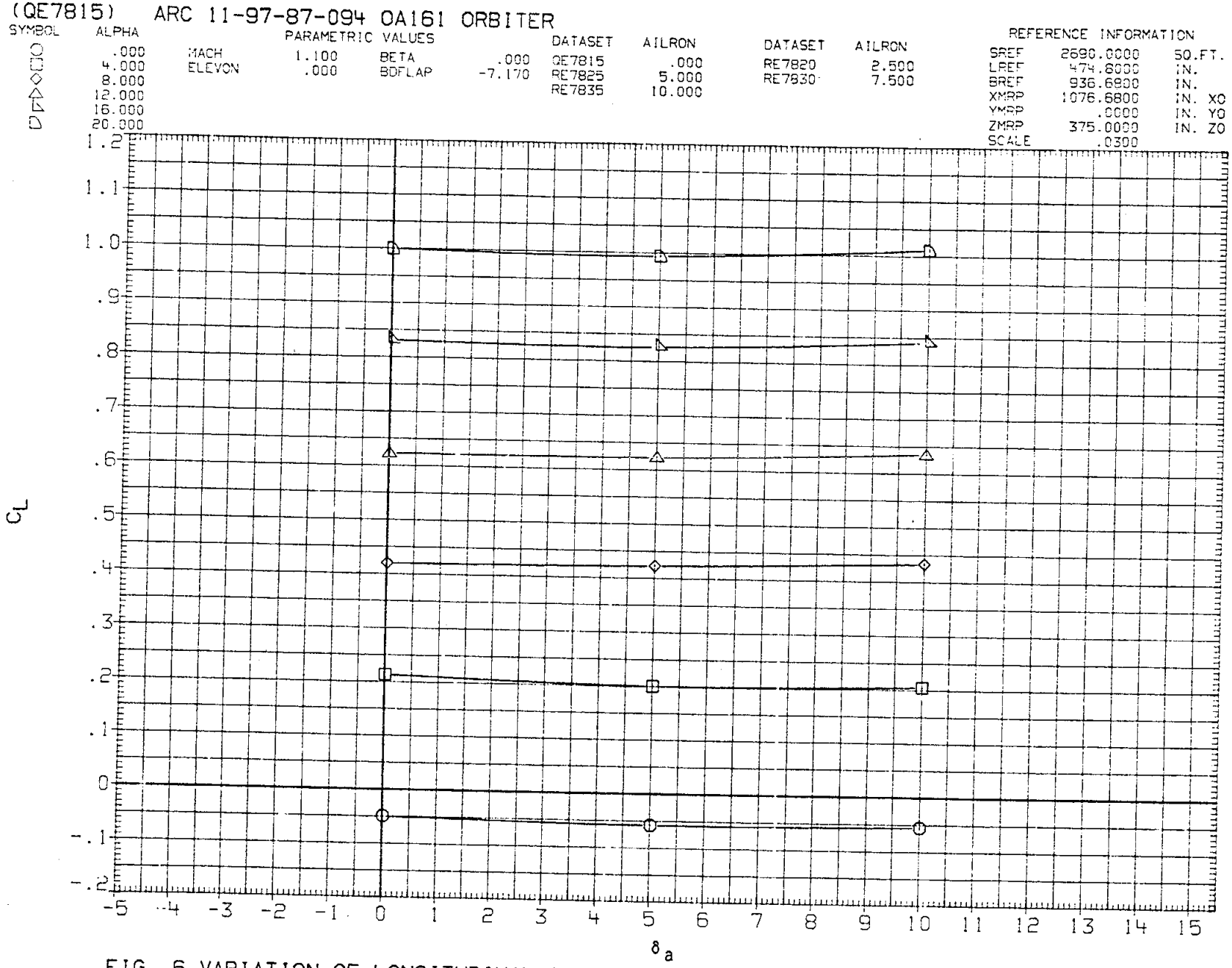


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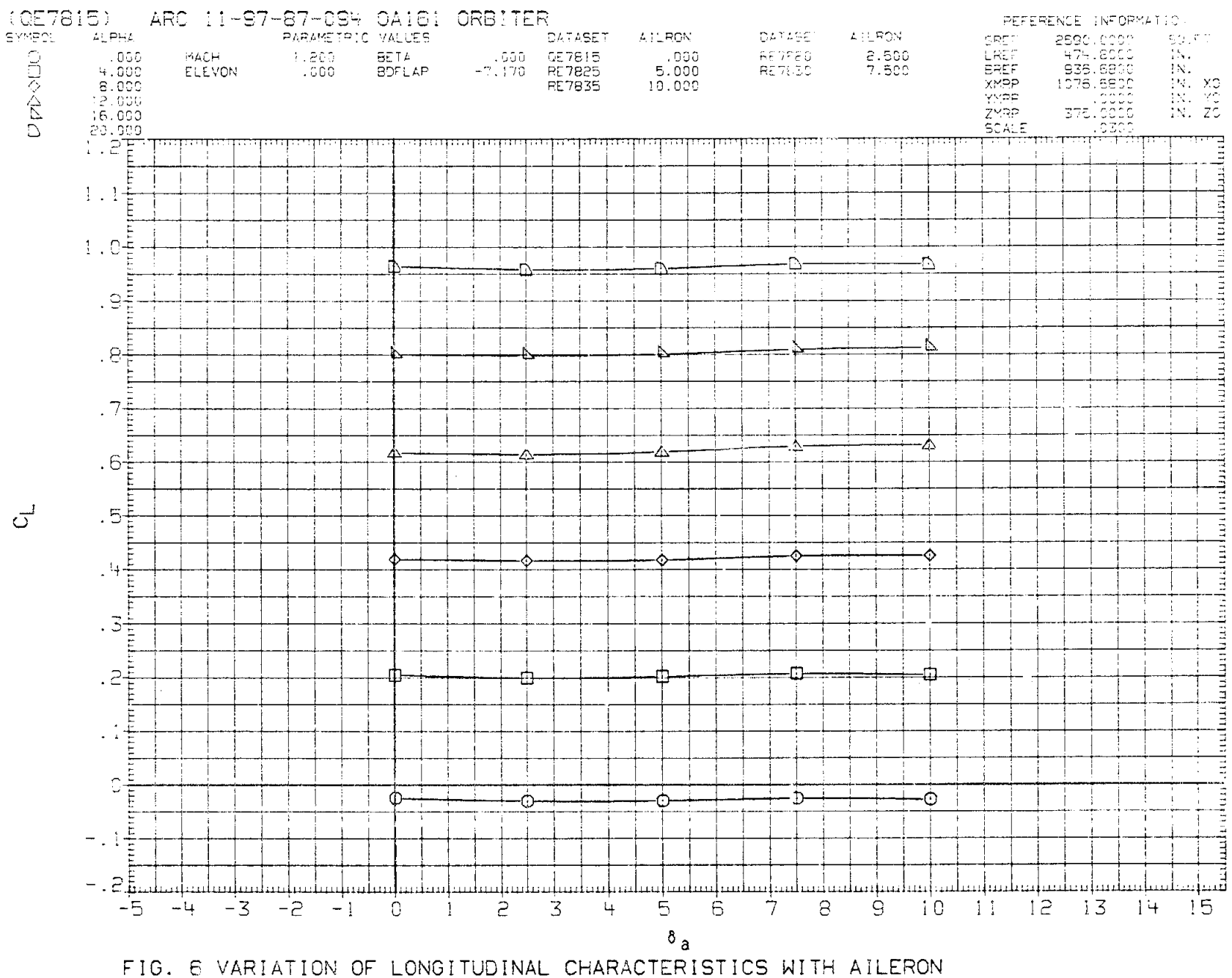


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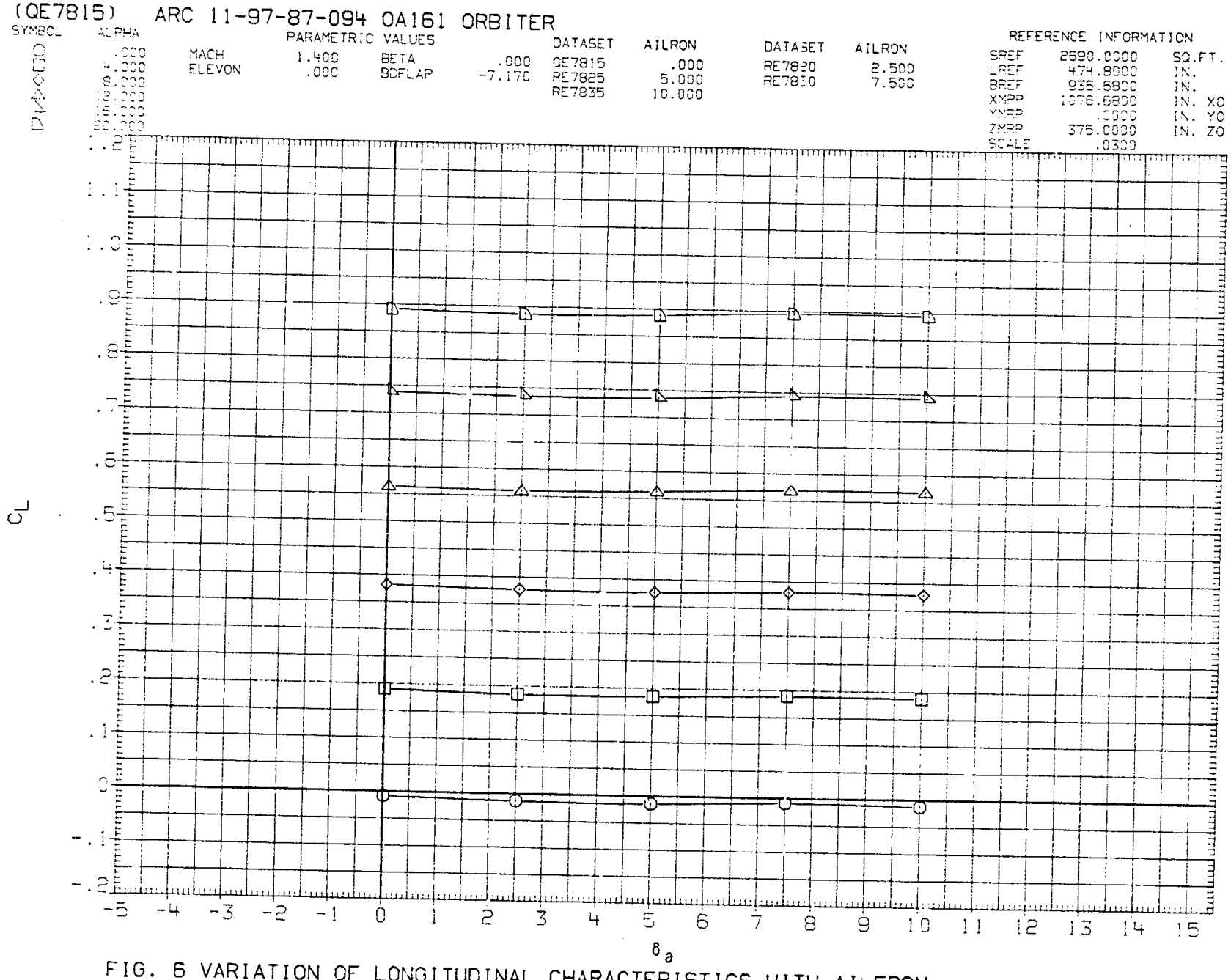


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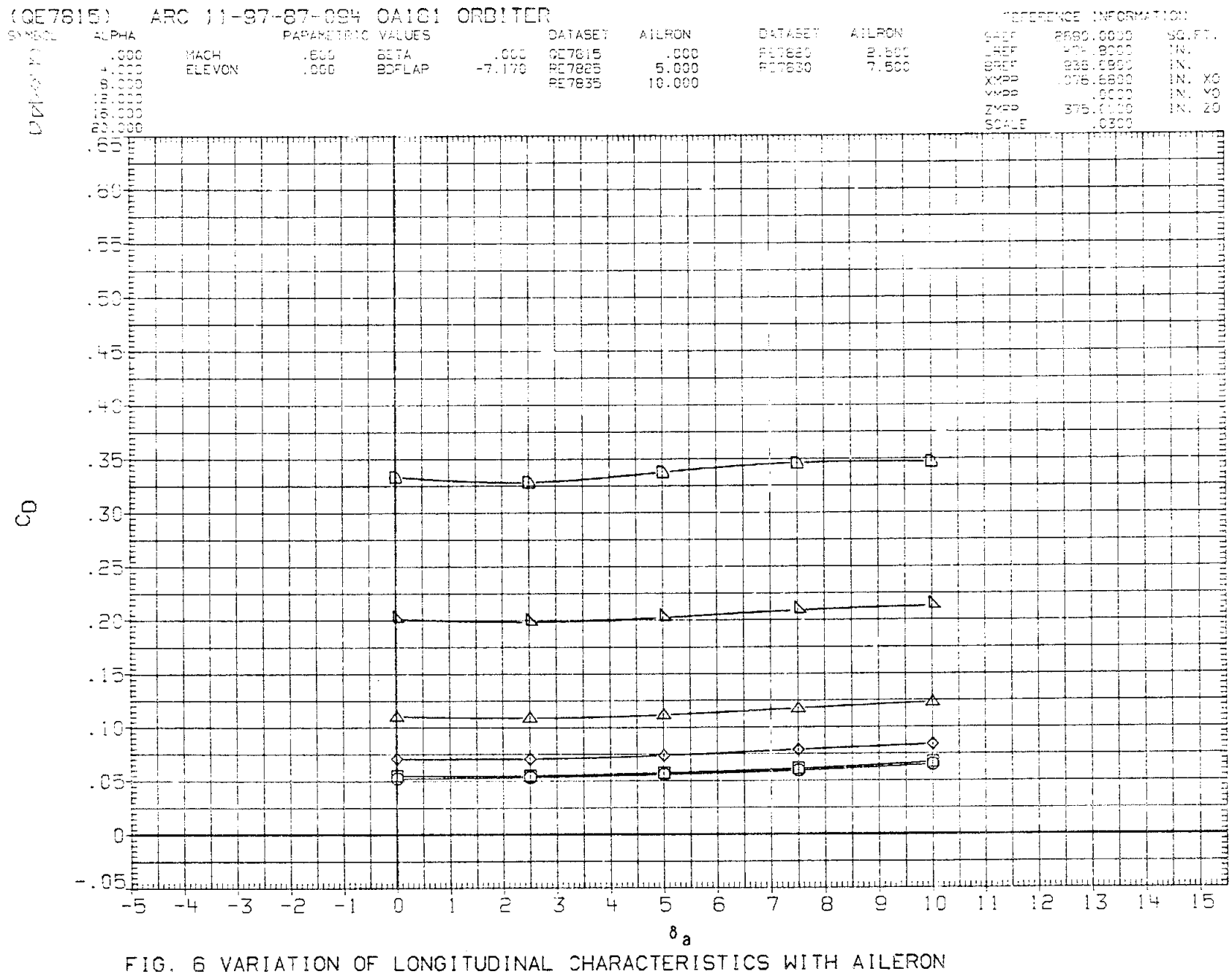


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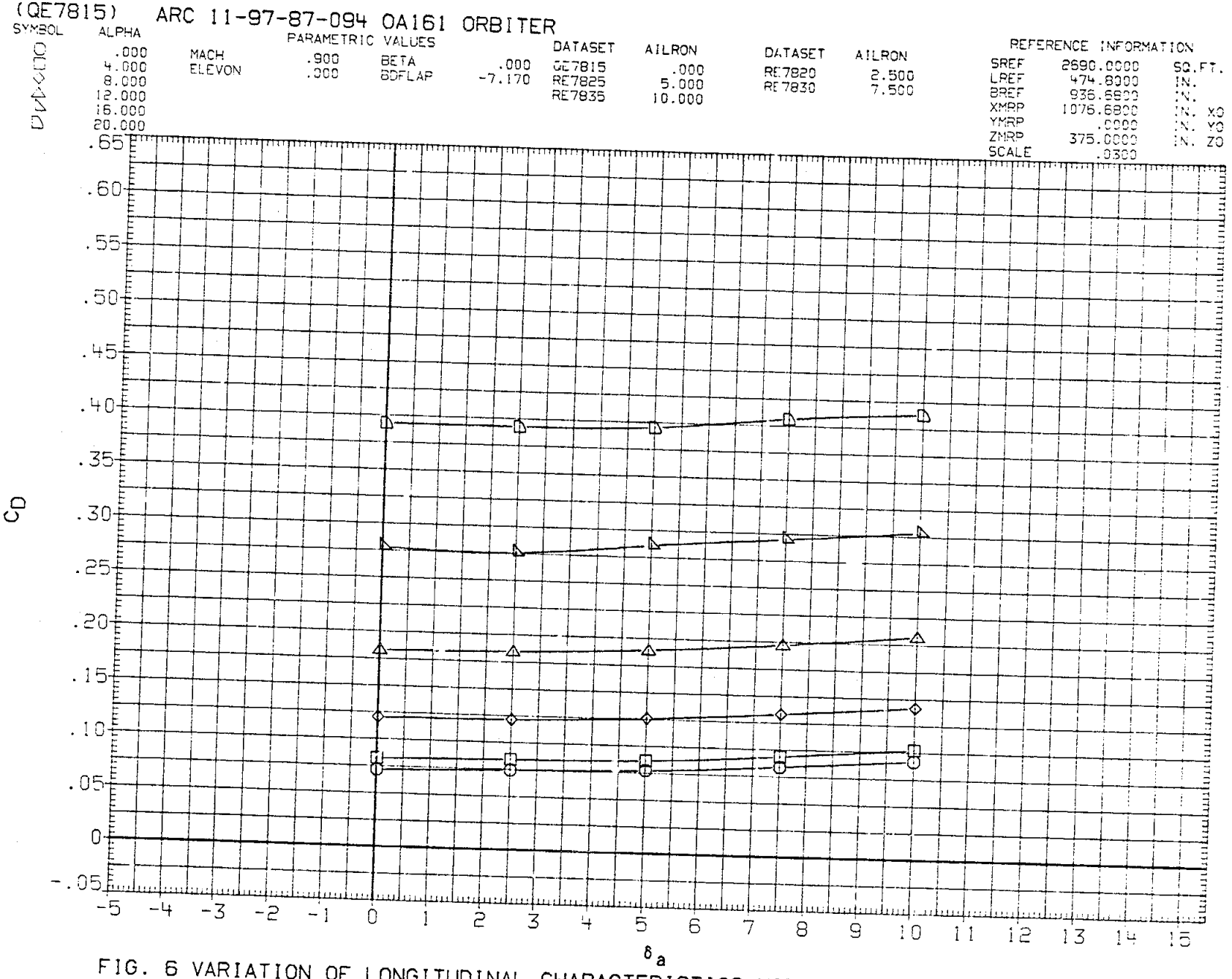


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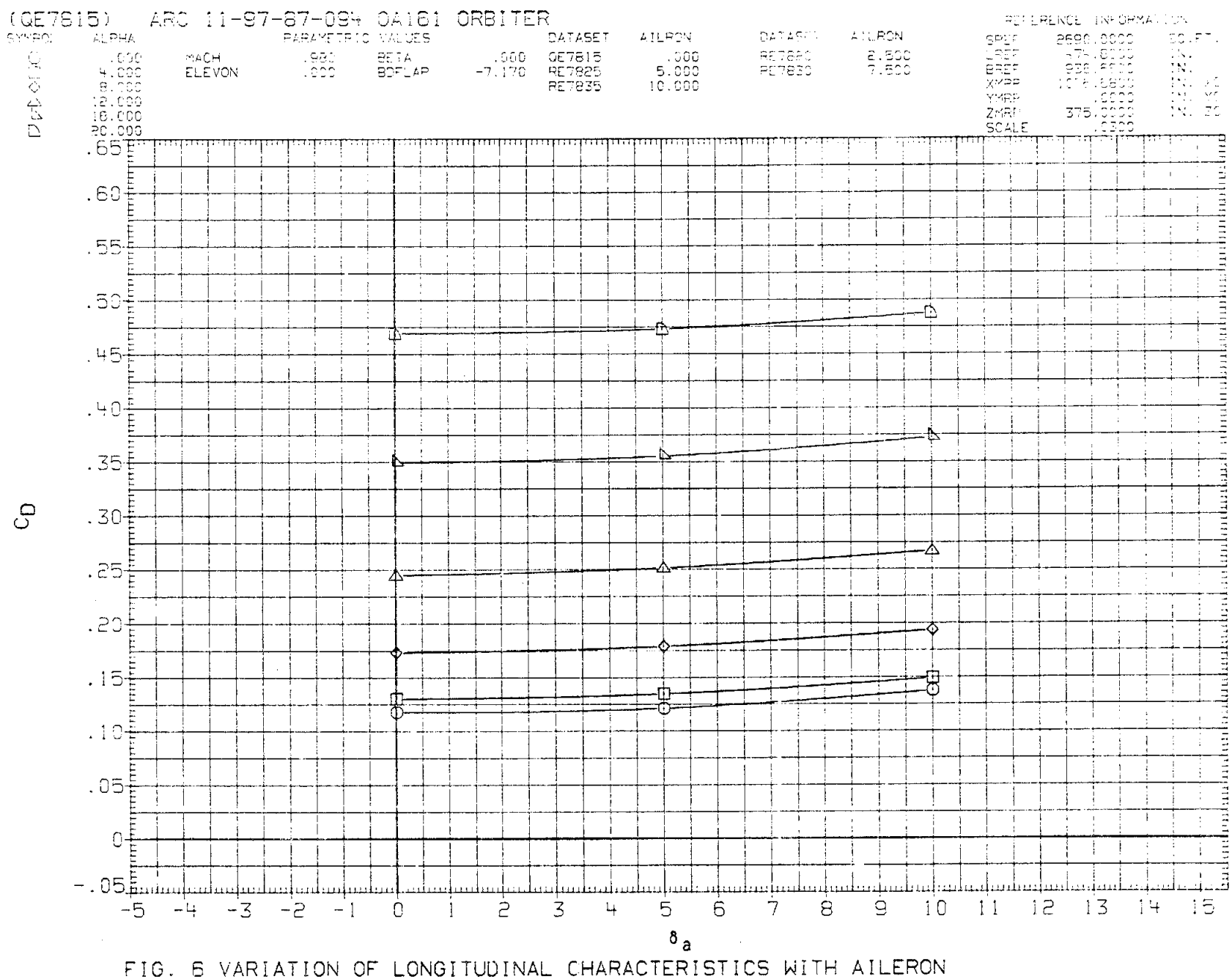


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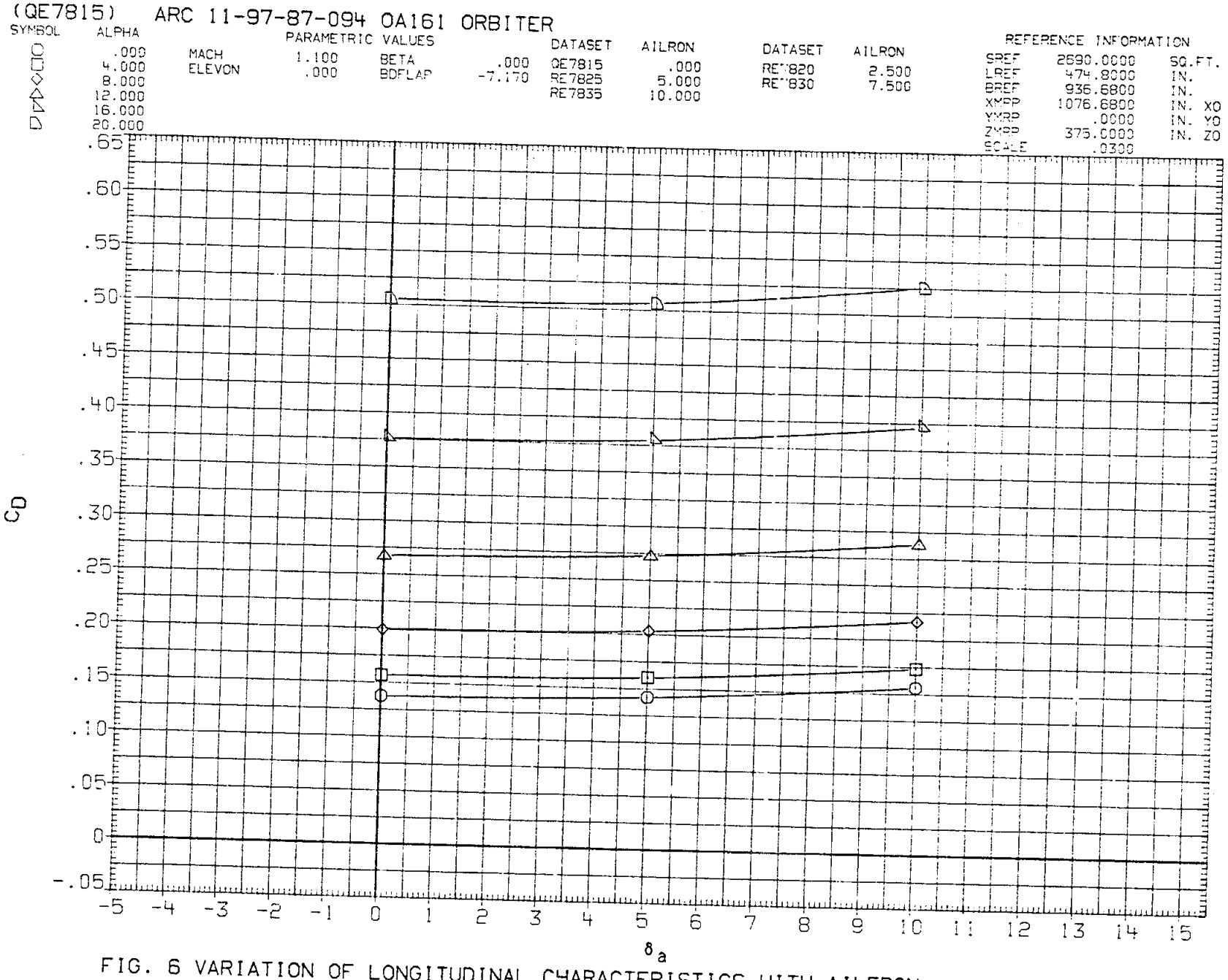


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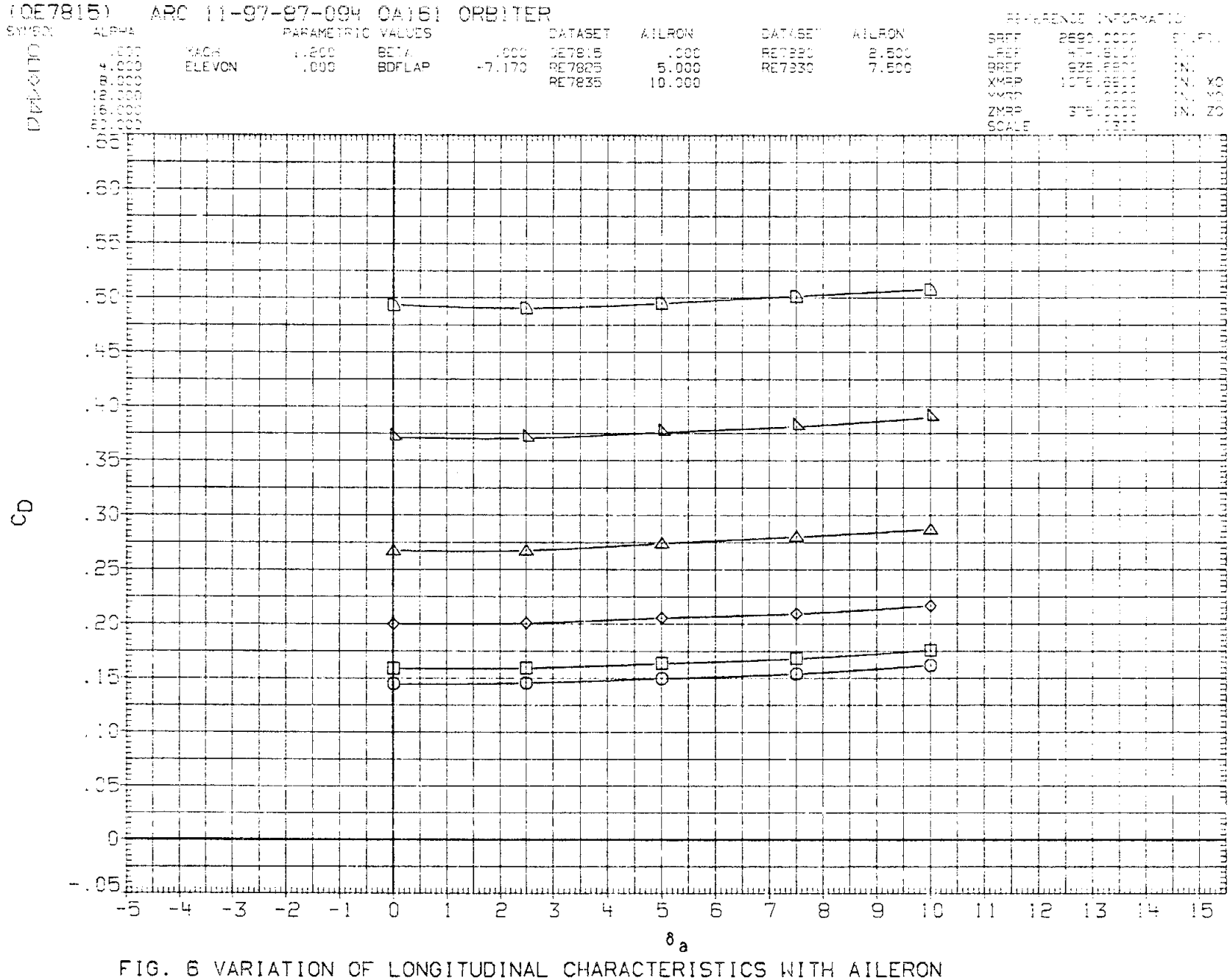


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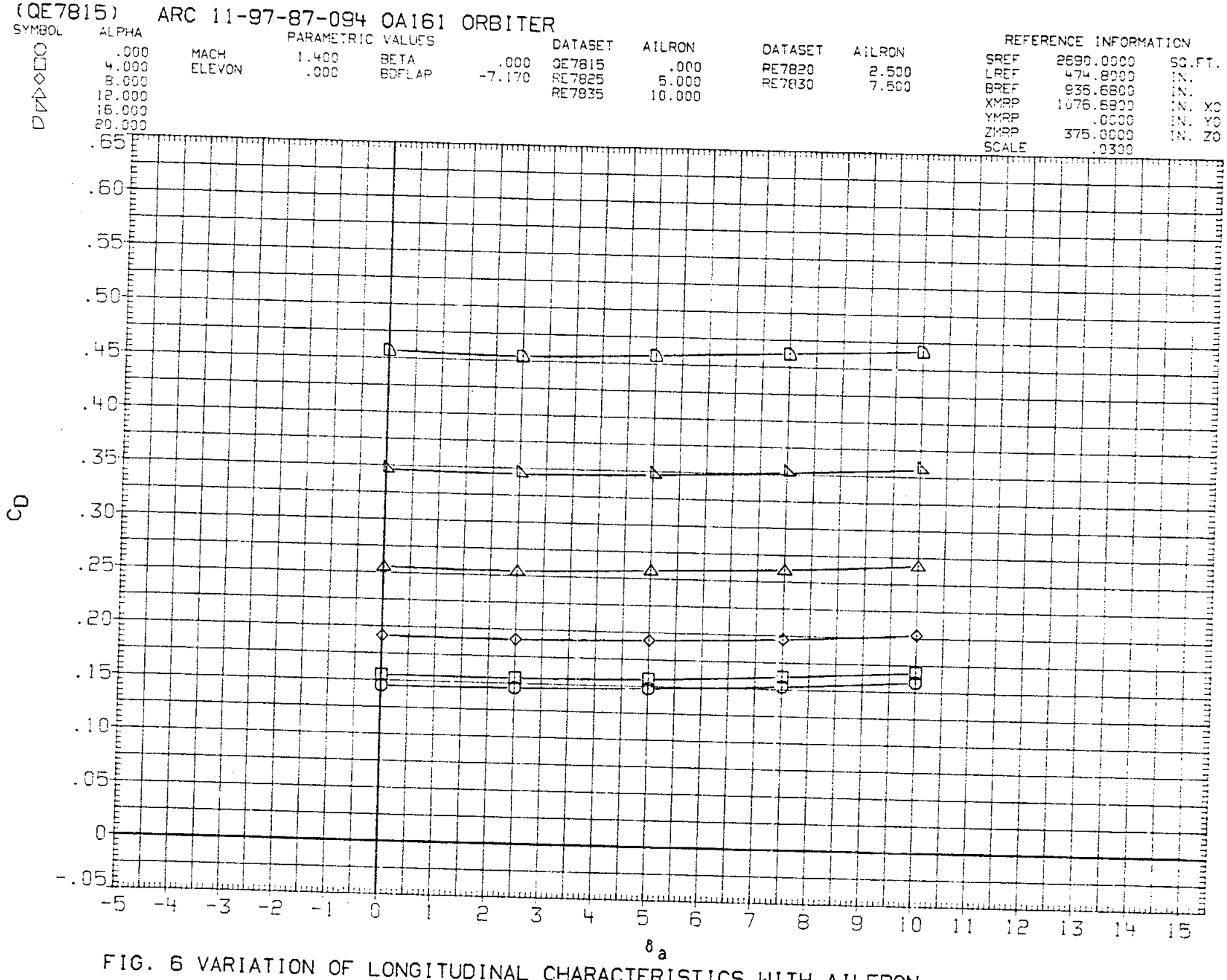


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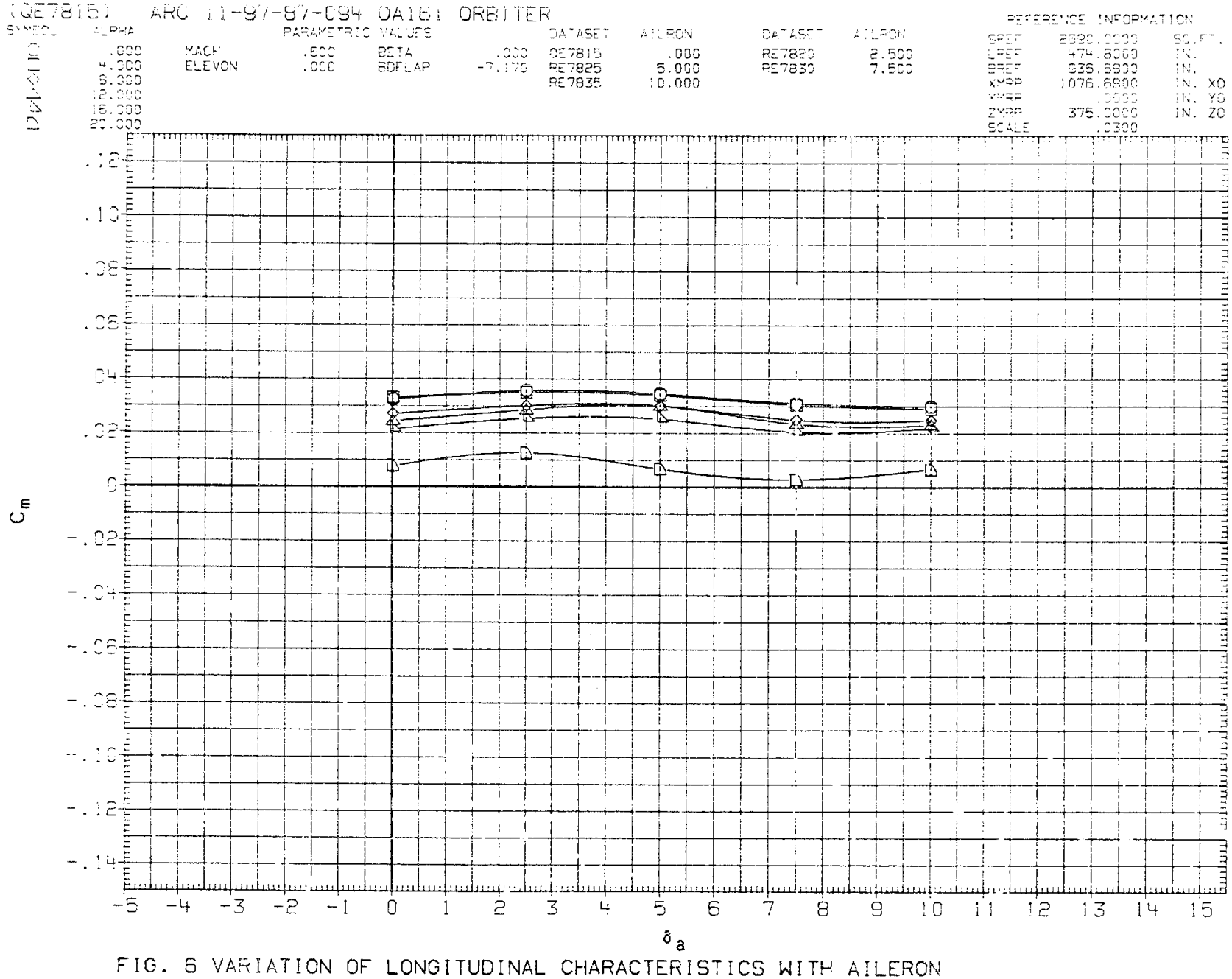


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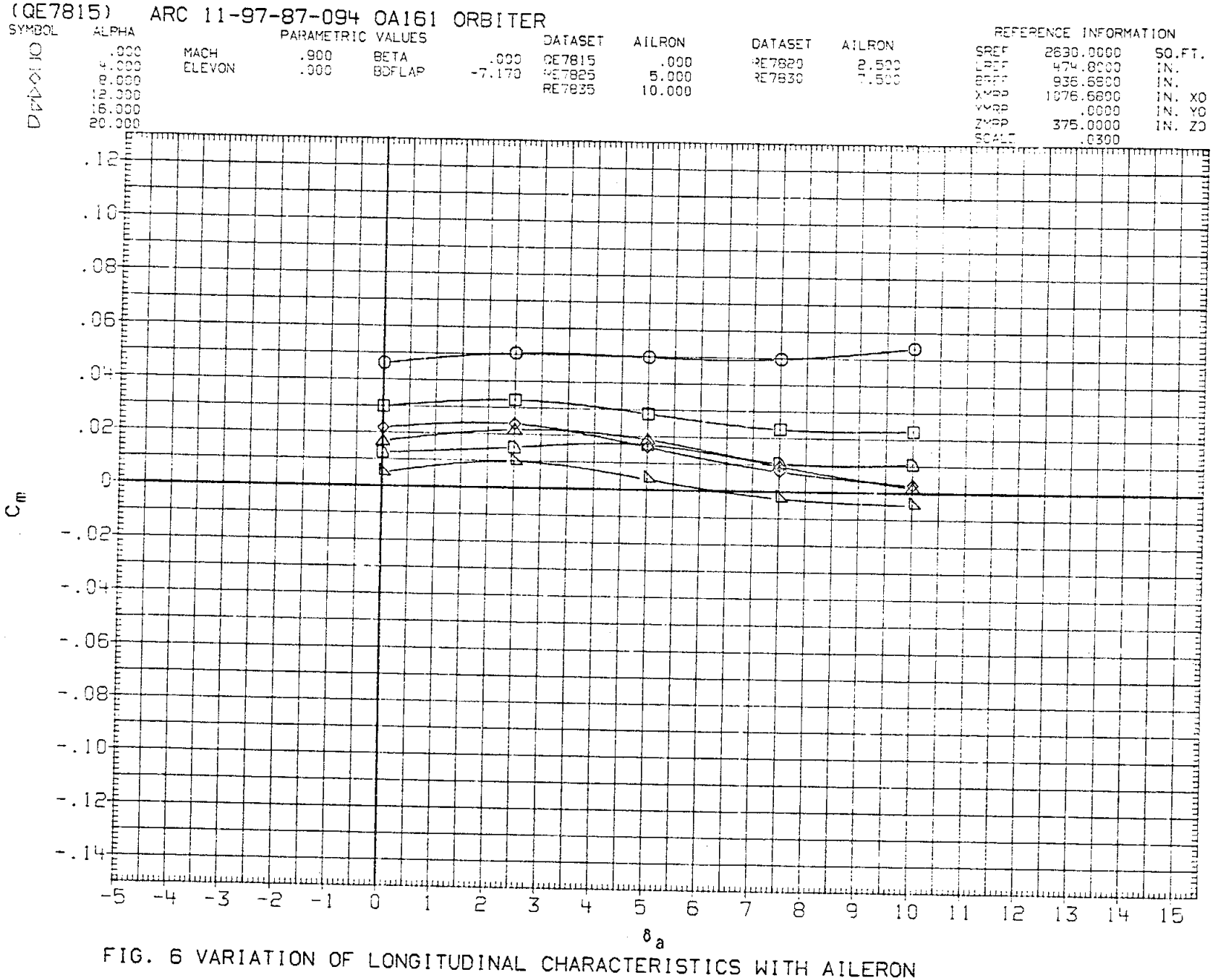


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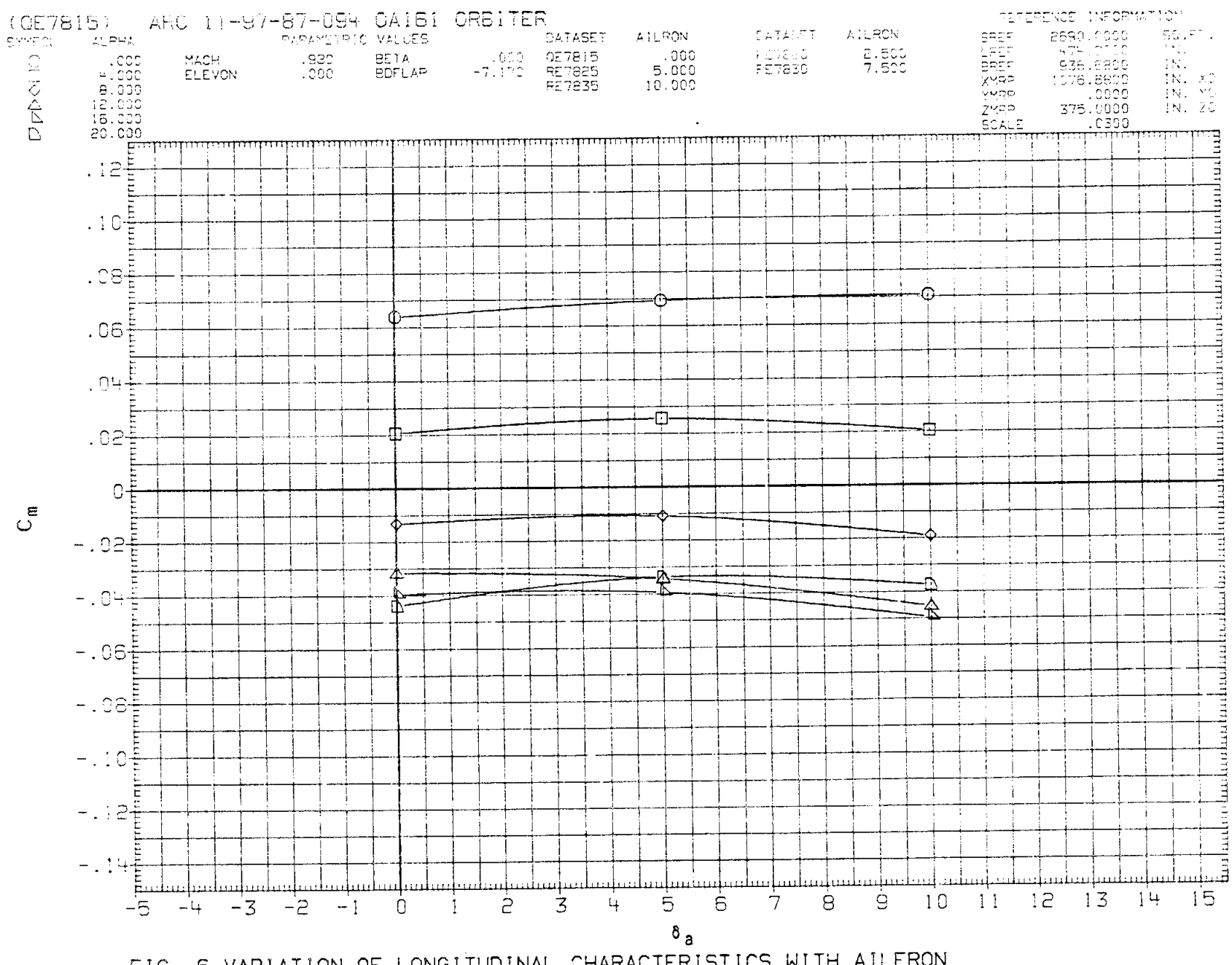


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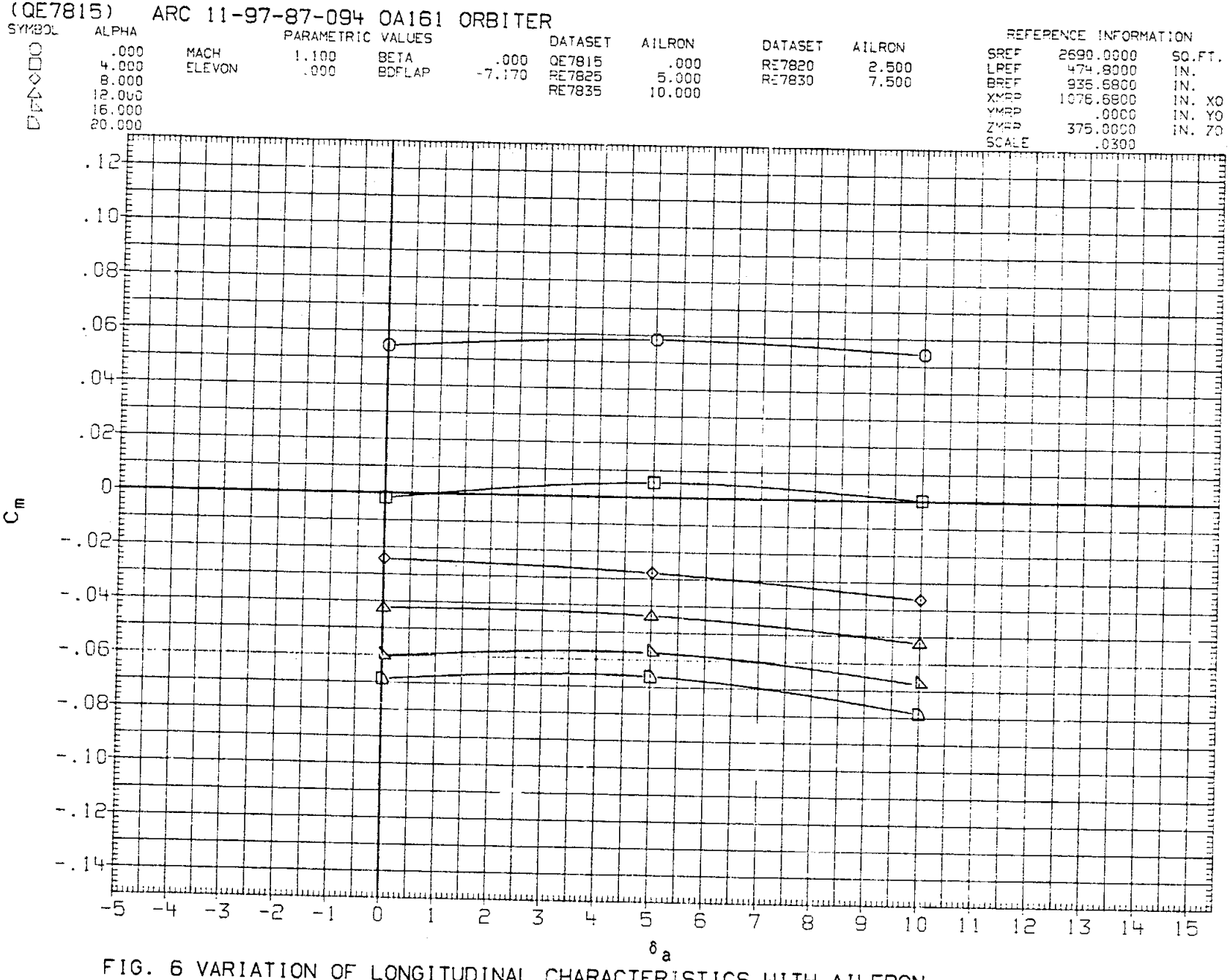


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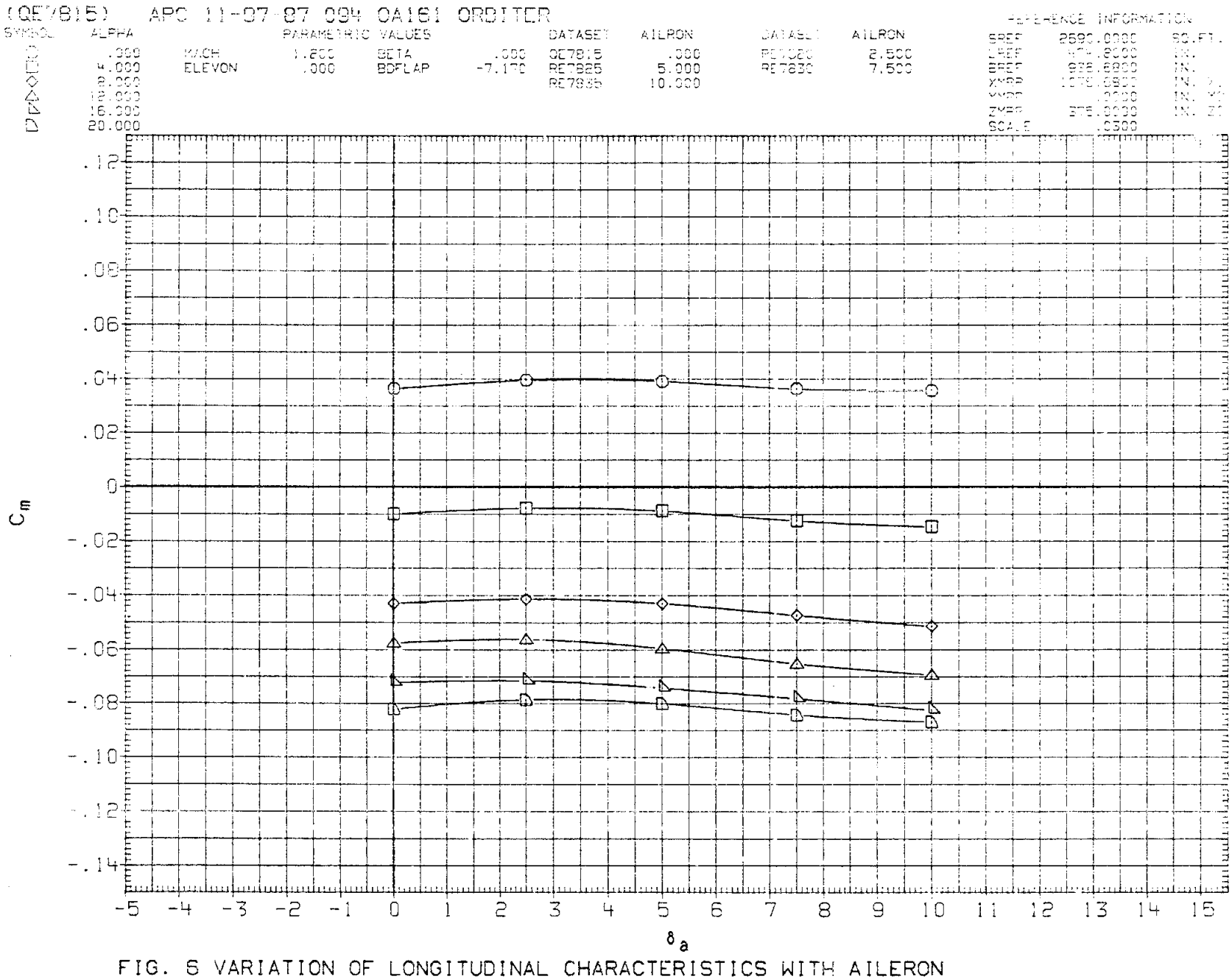


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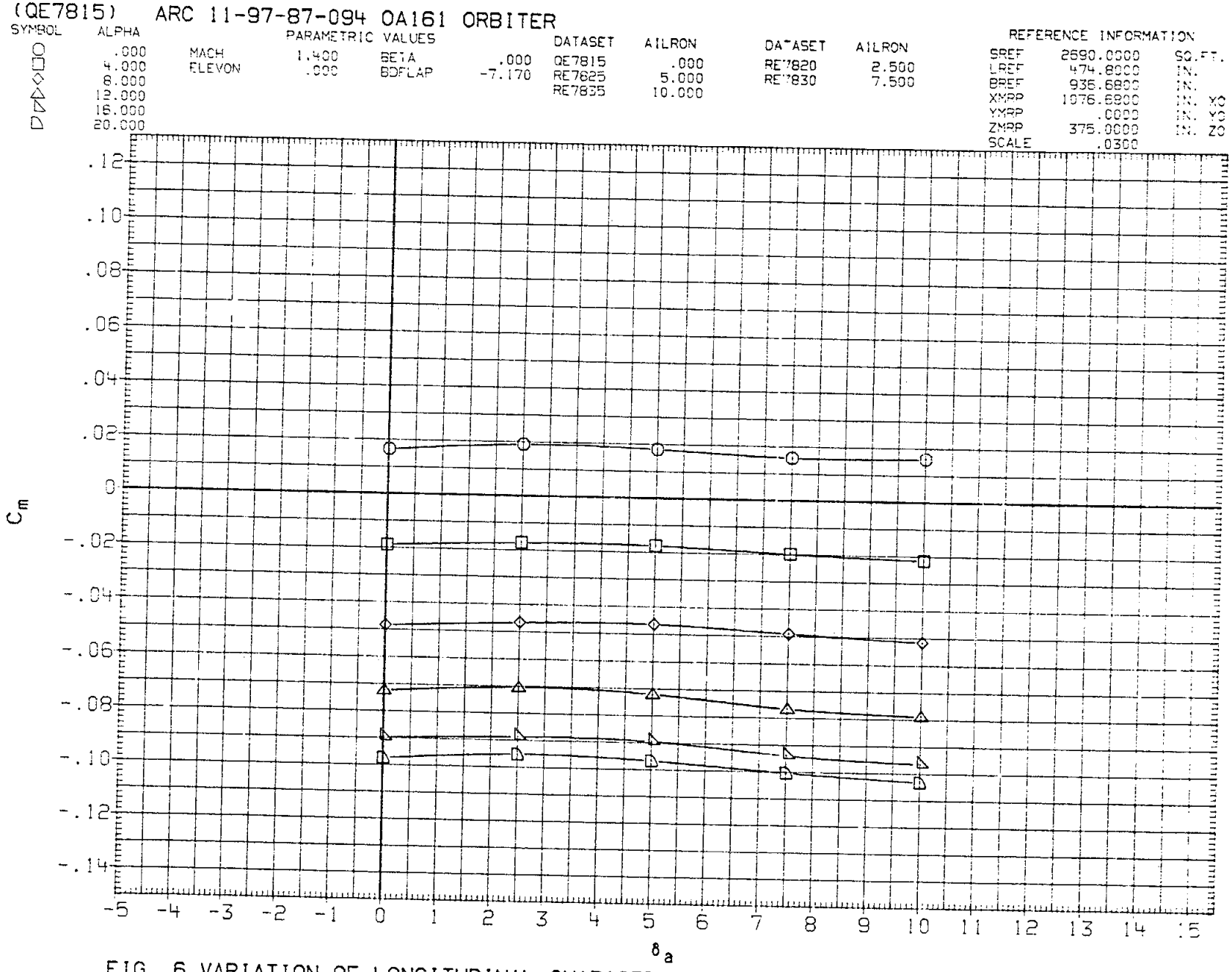


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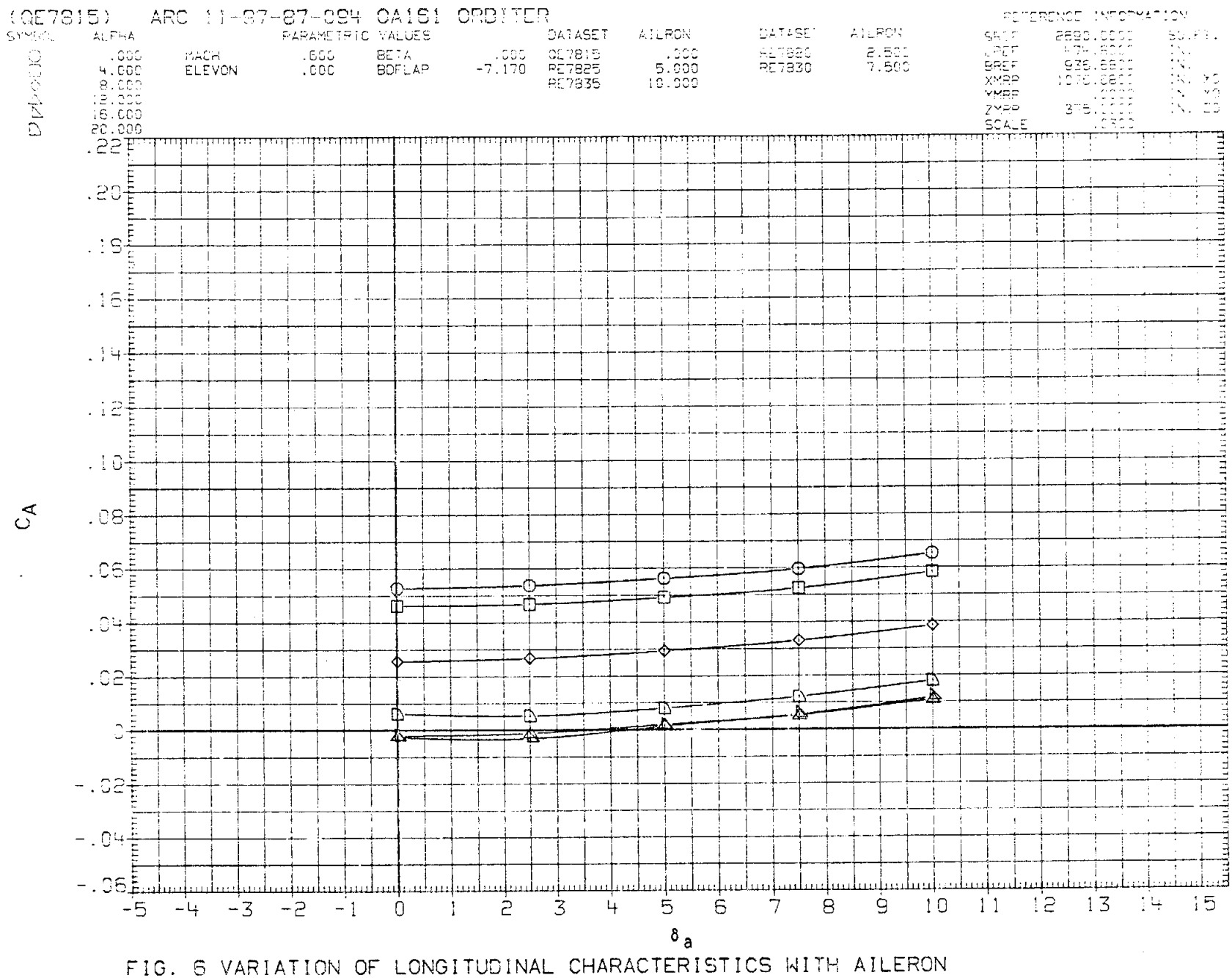


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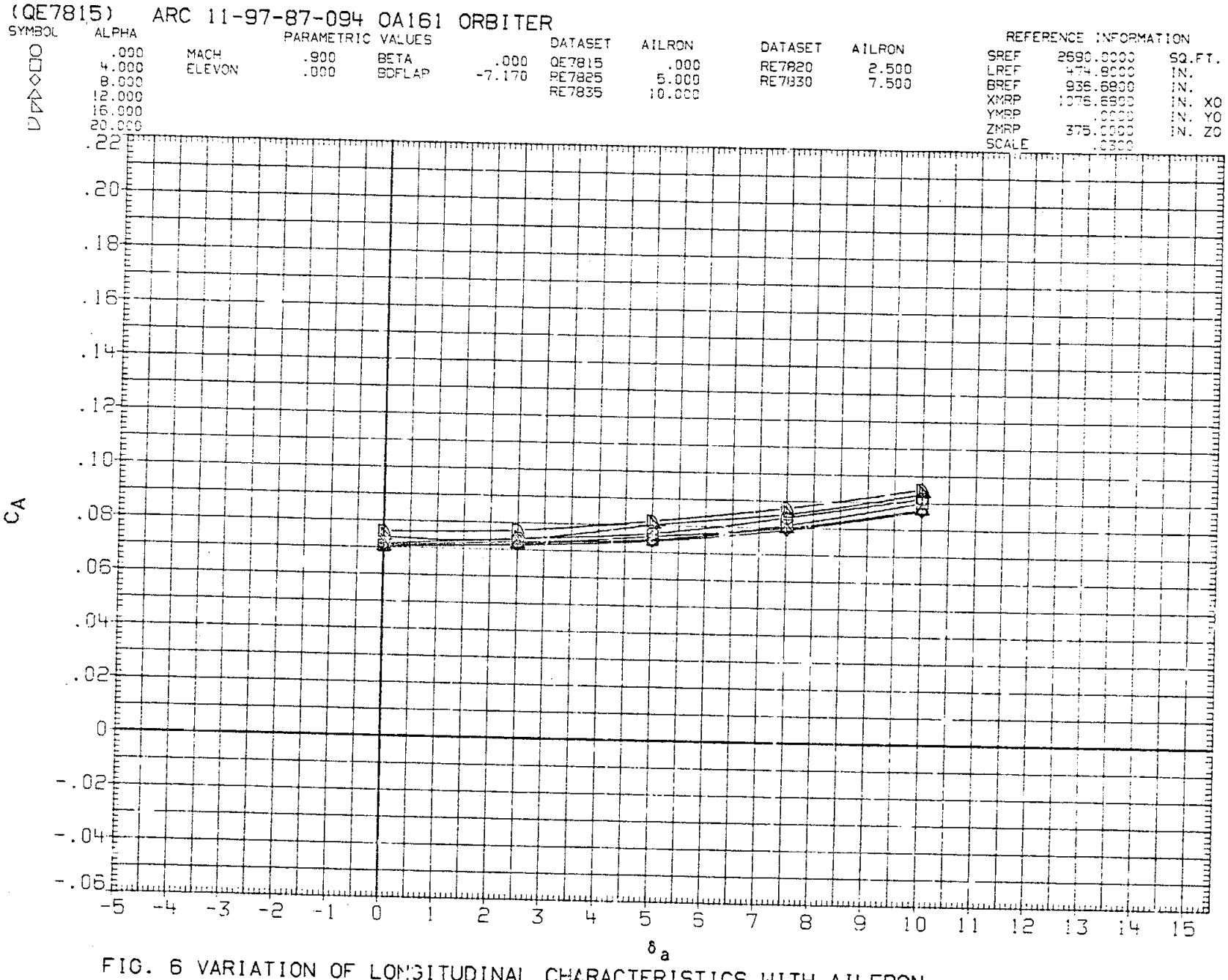


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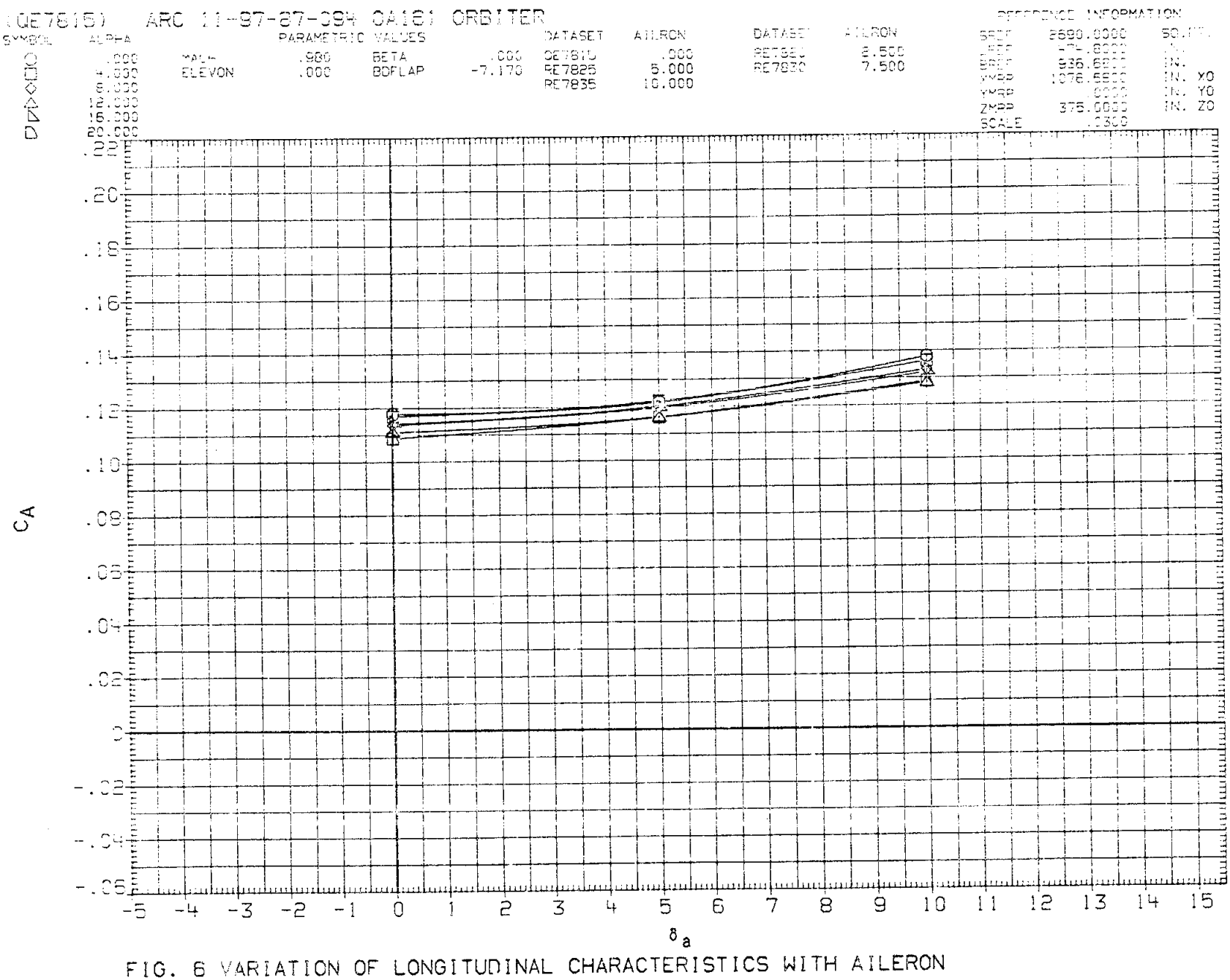


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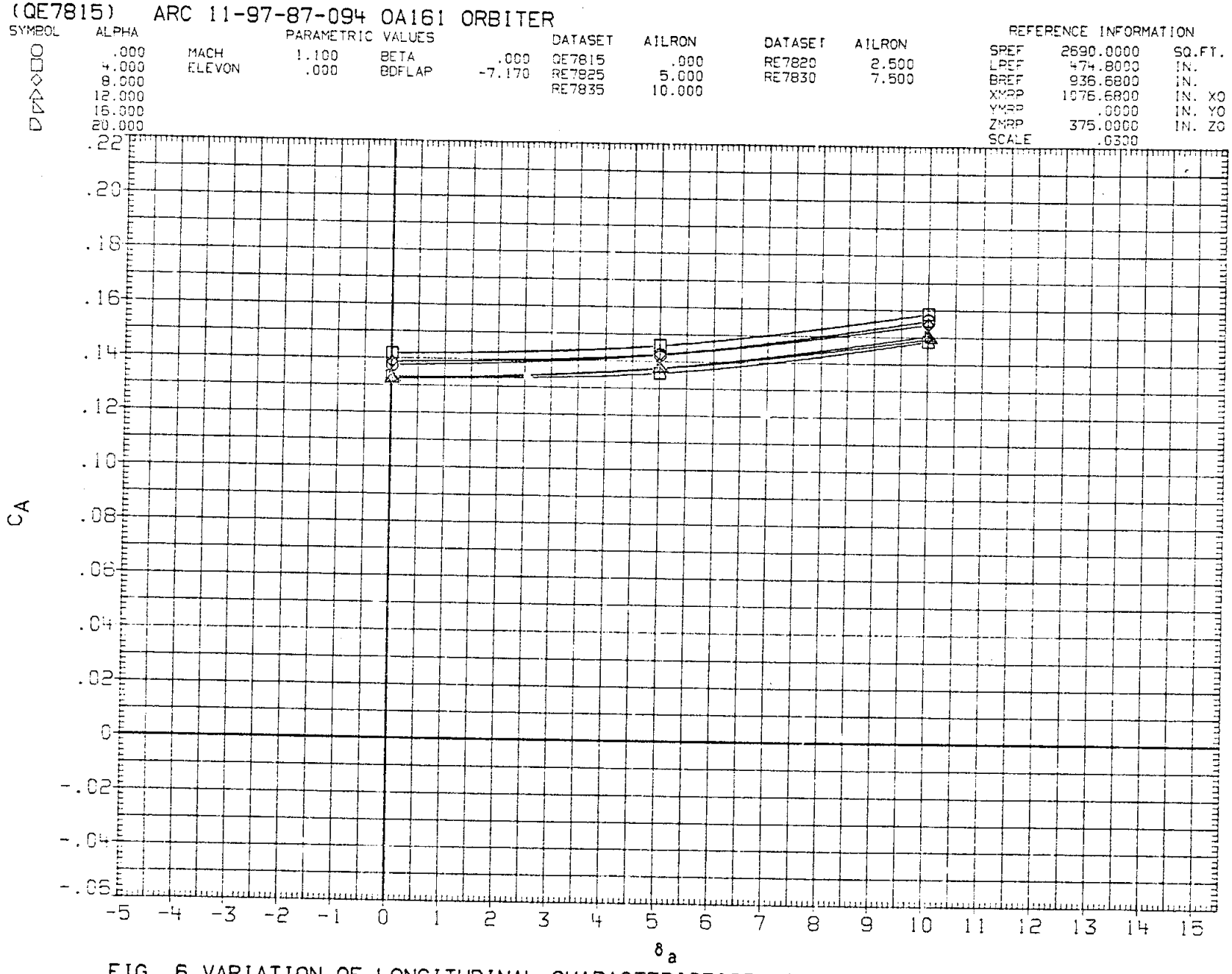


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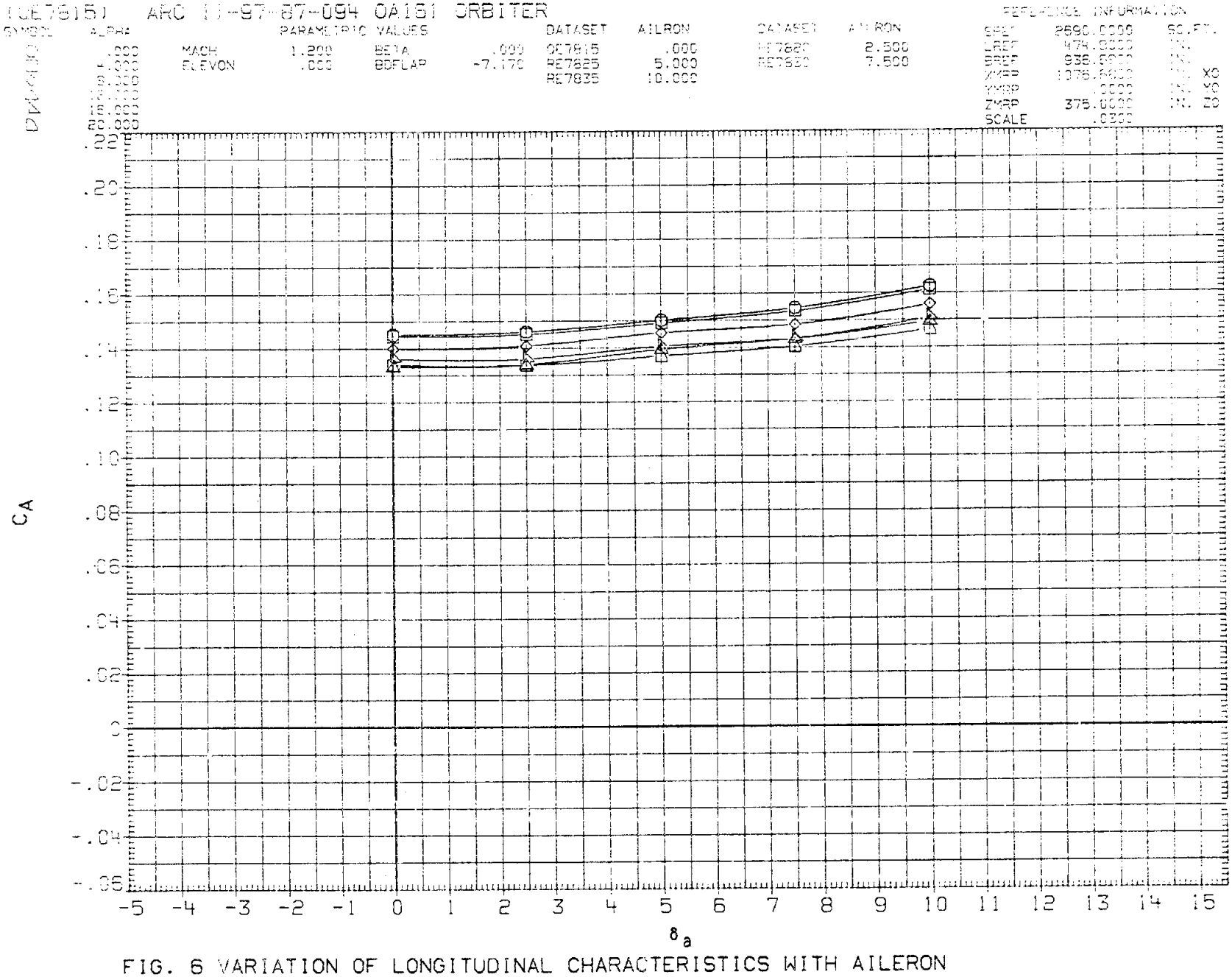


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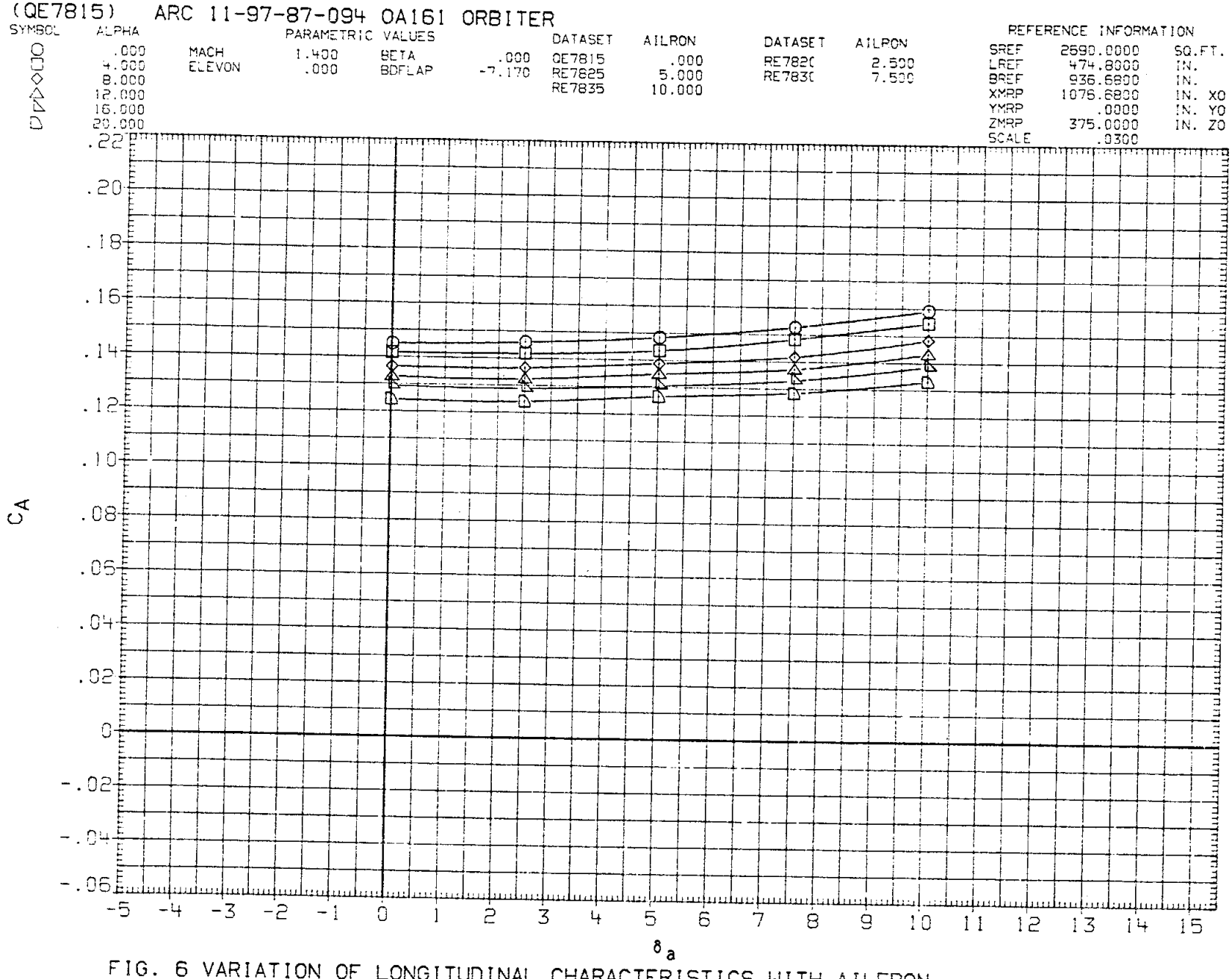


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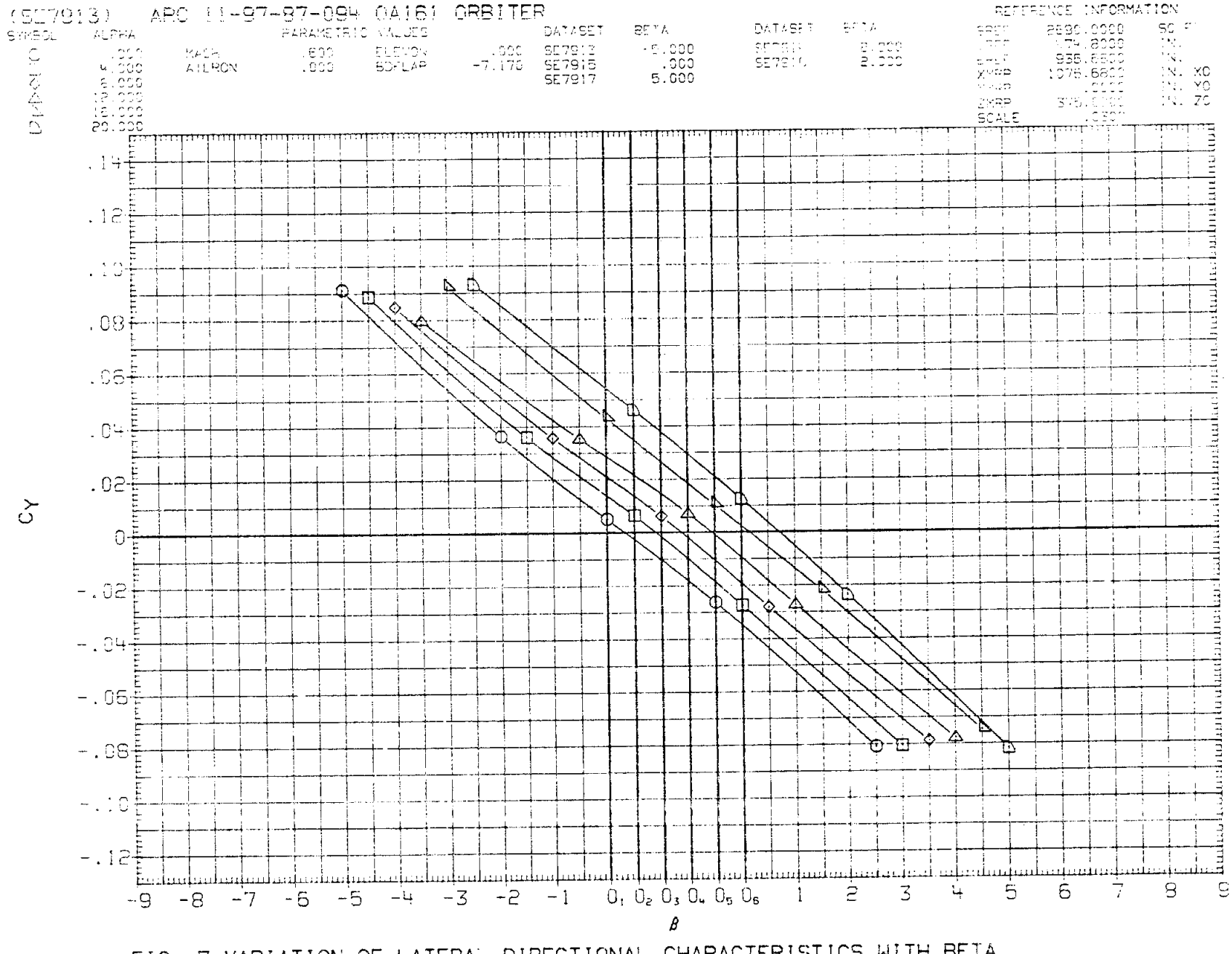


FIG. 7 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH BETA

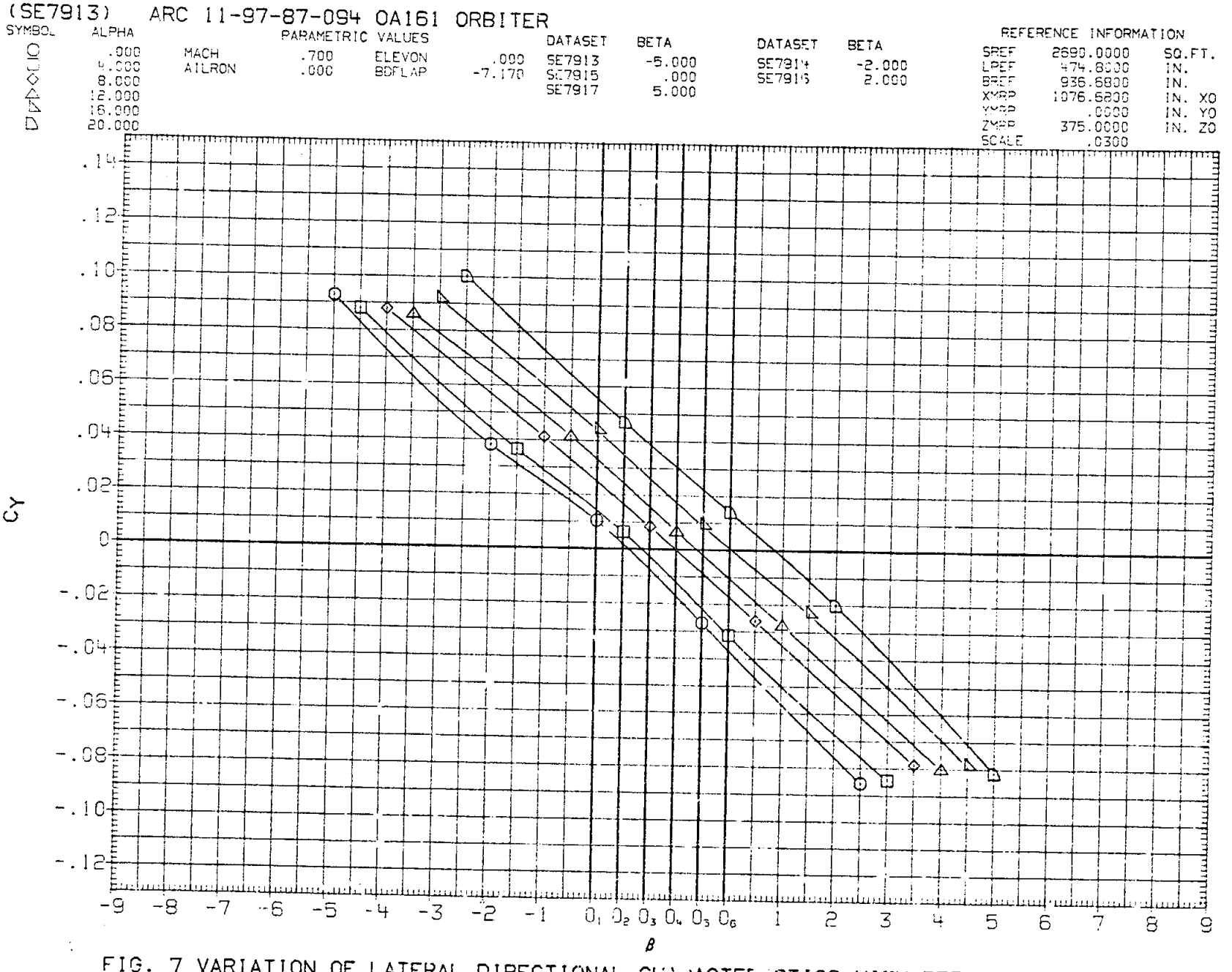


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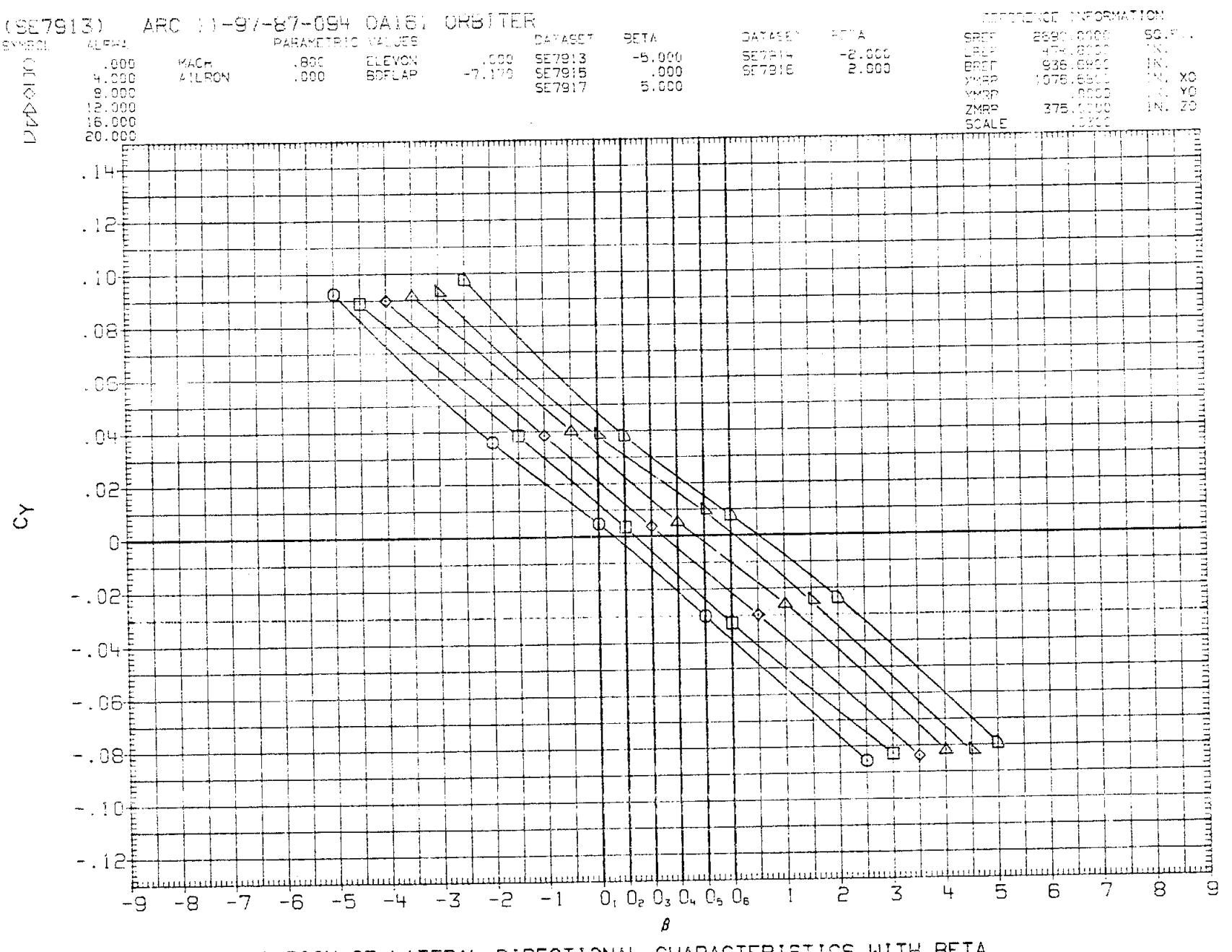


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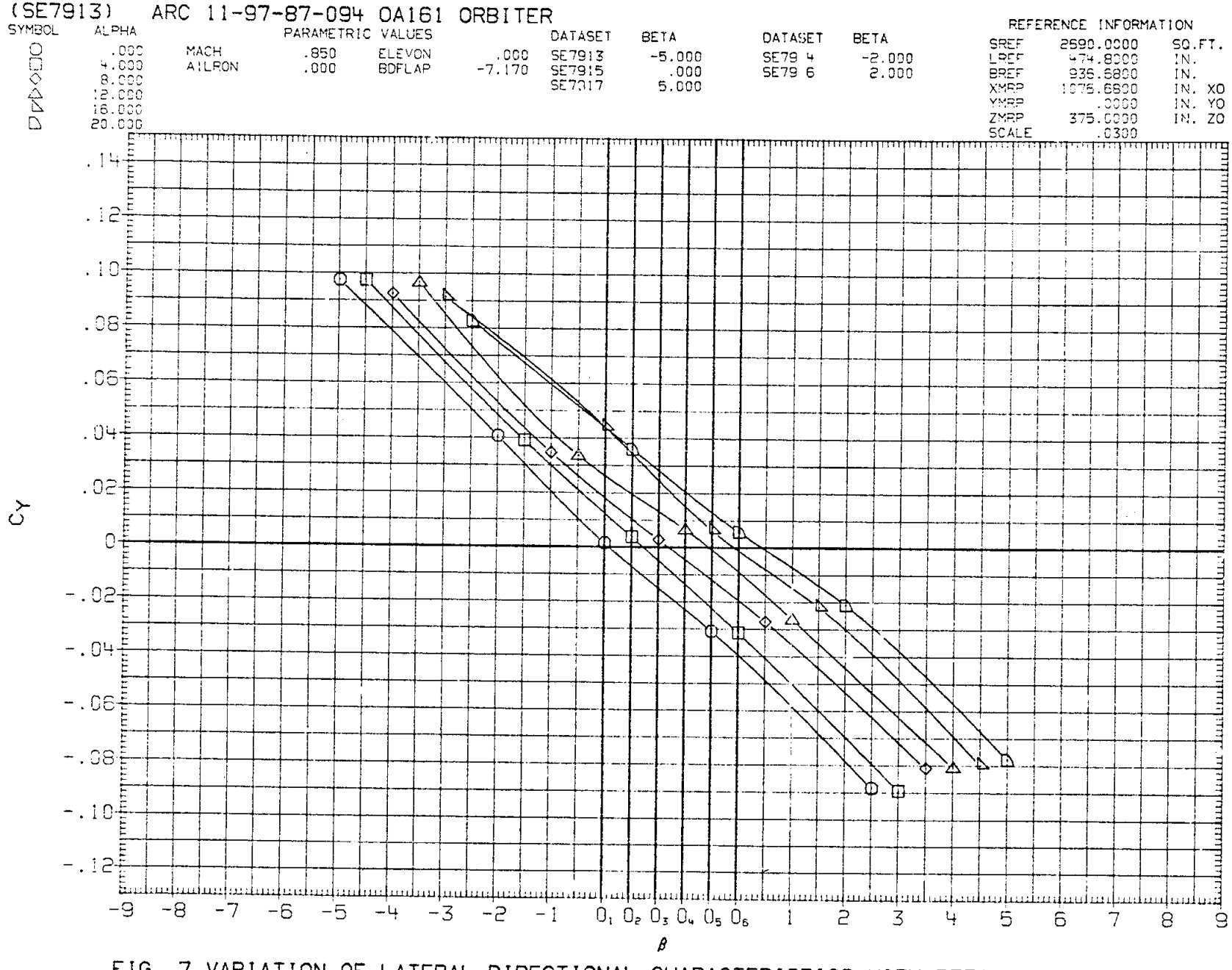


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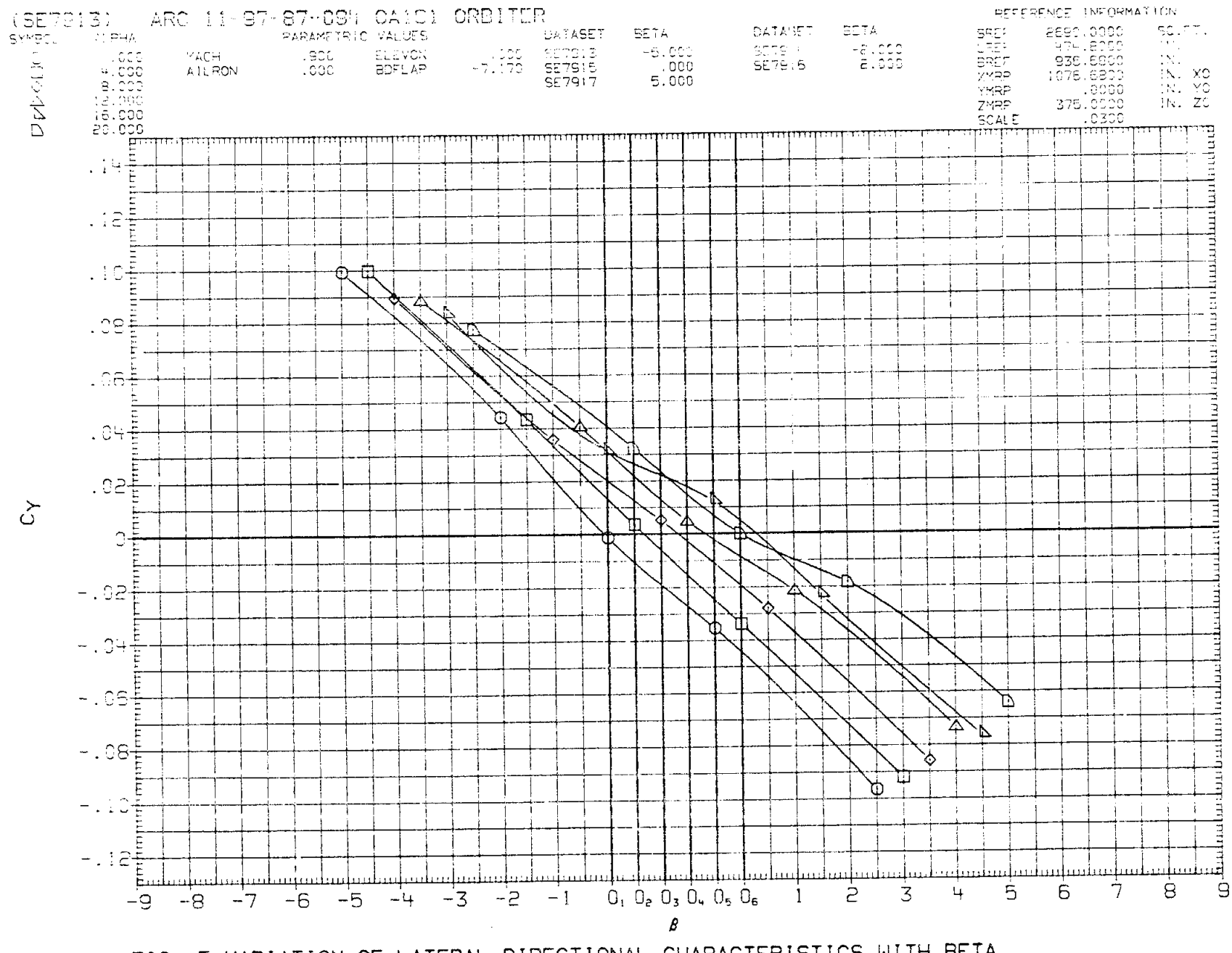


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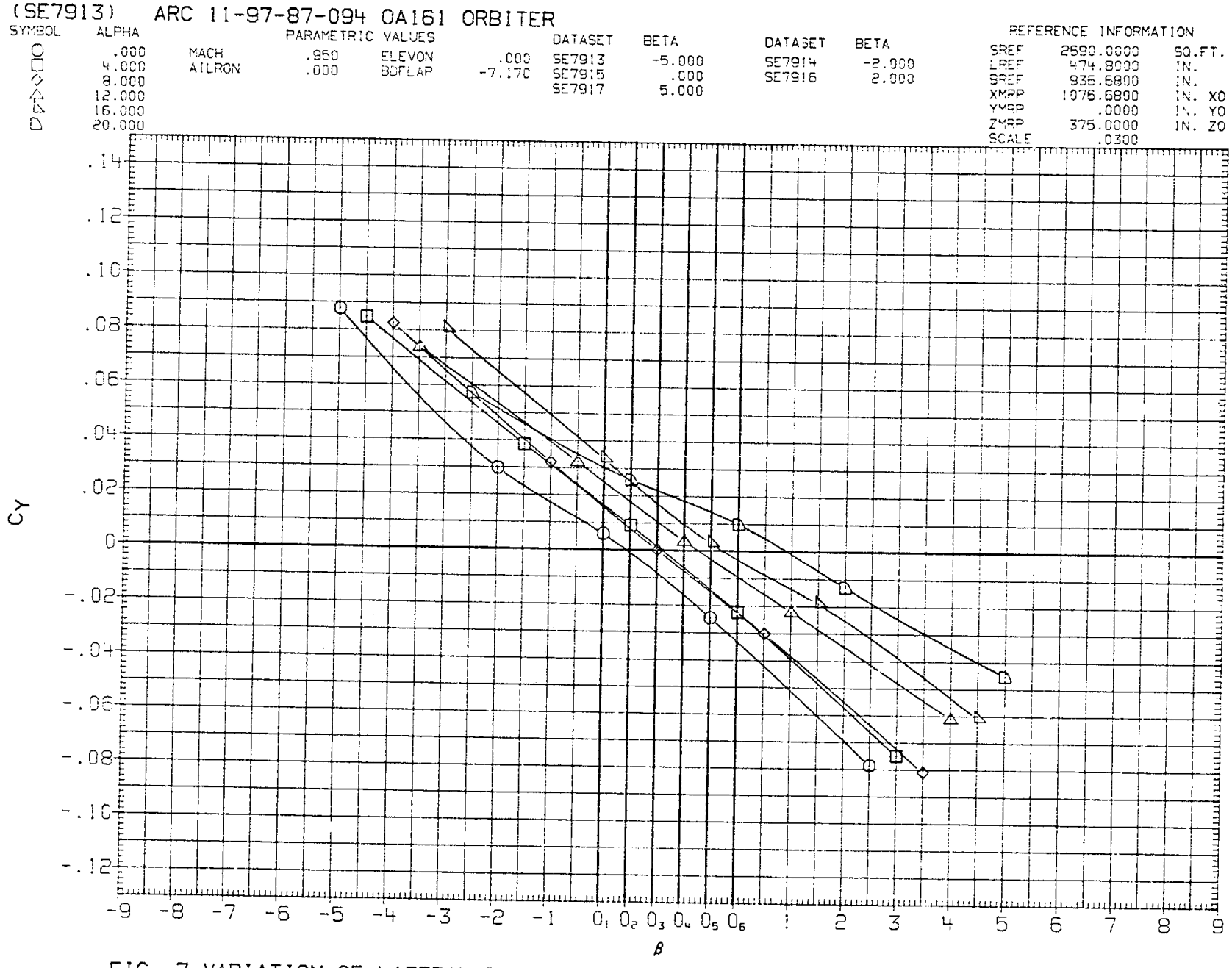


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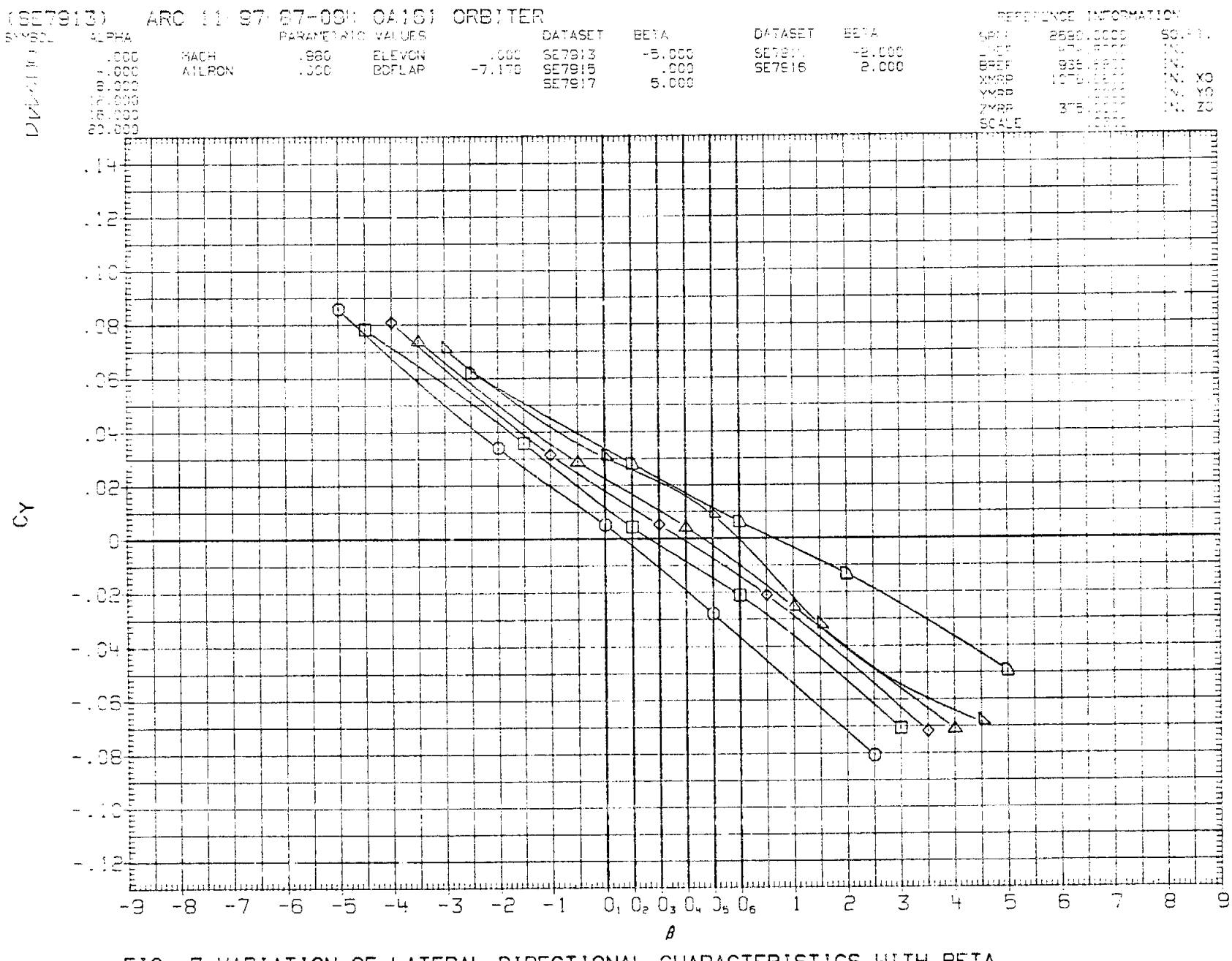


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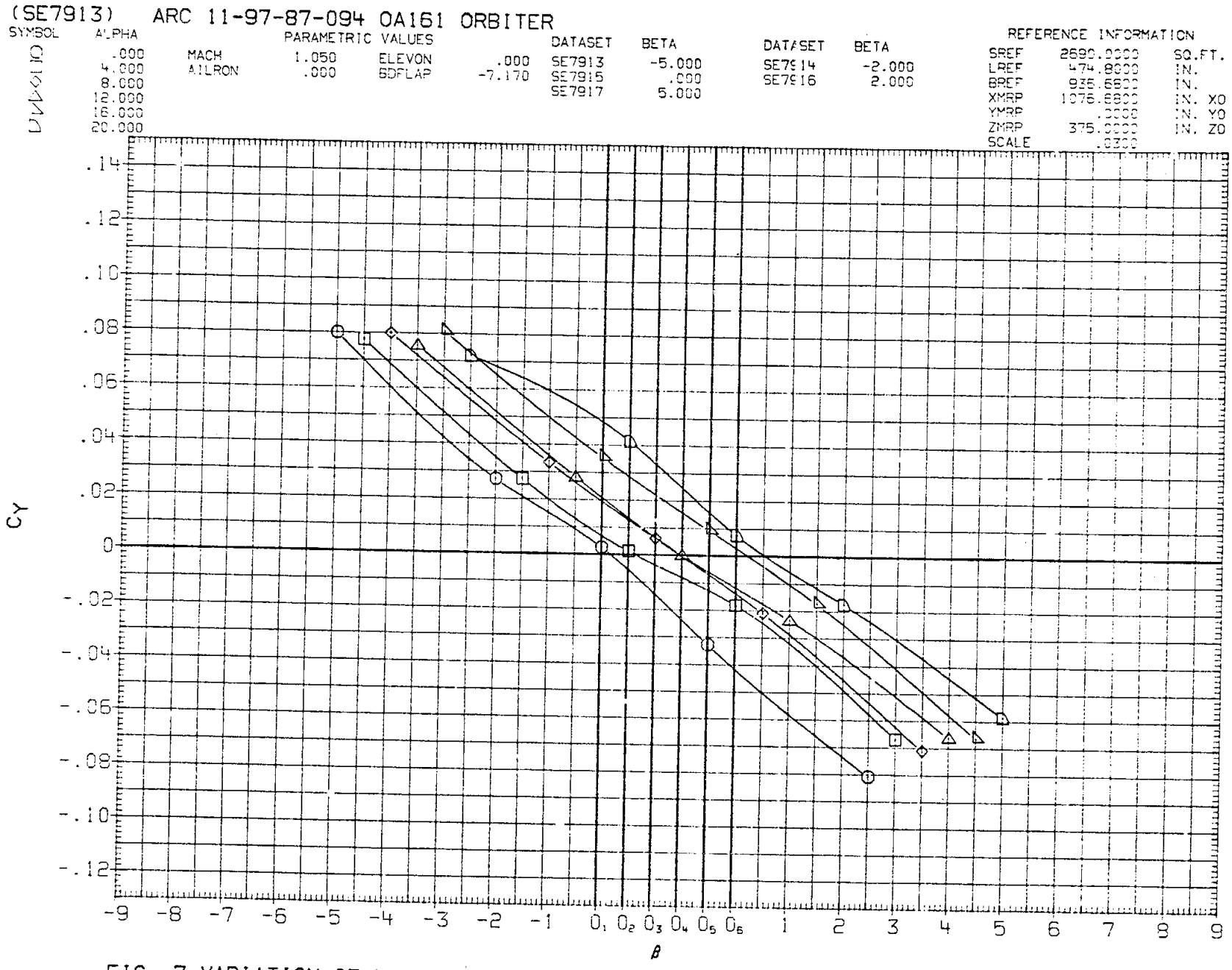


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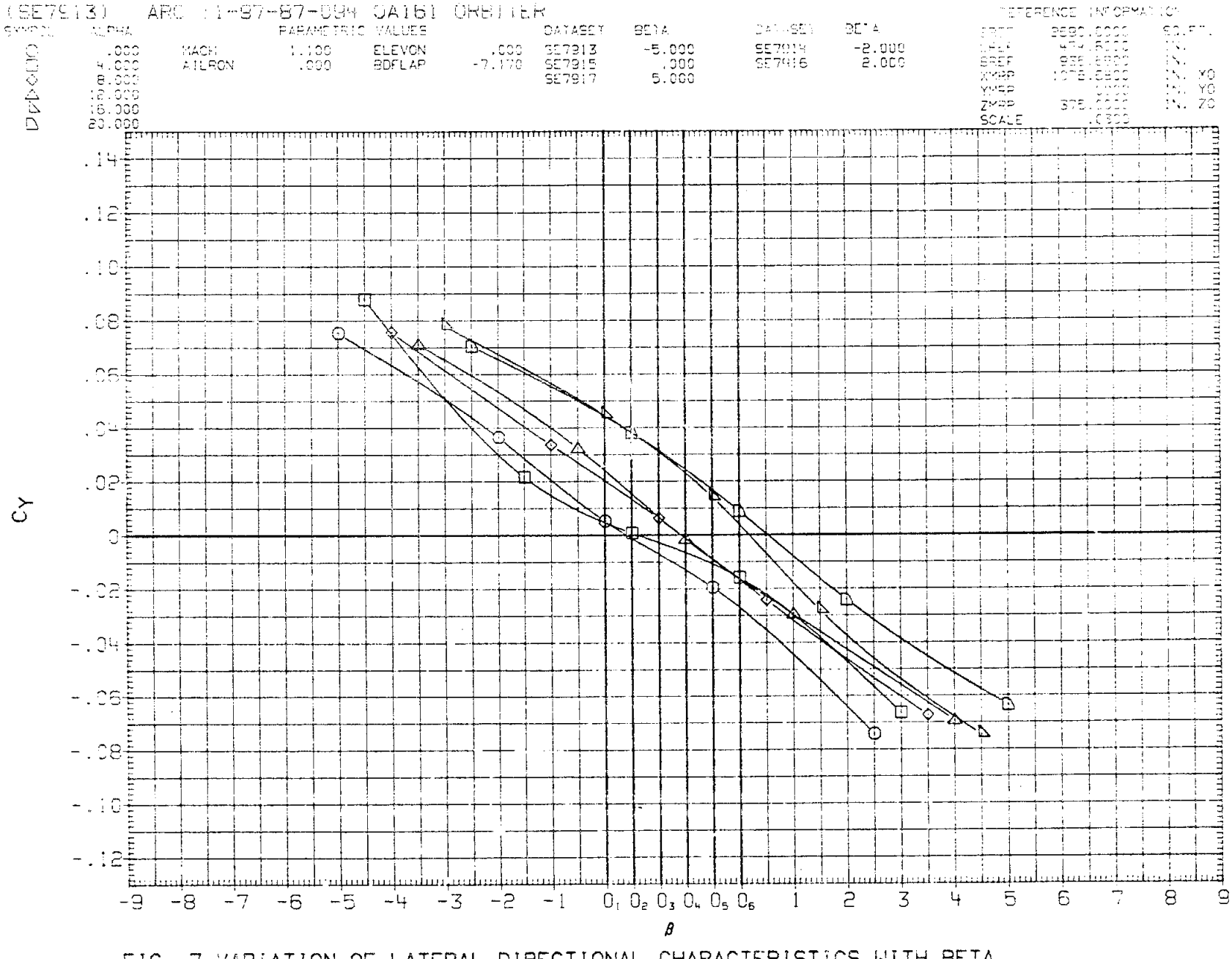


FIG. 7 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH BETA

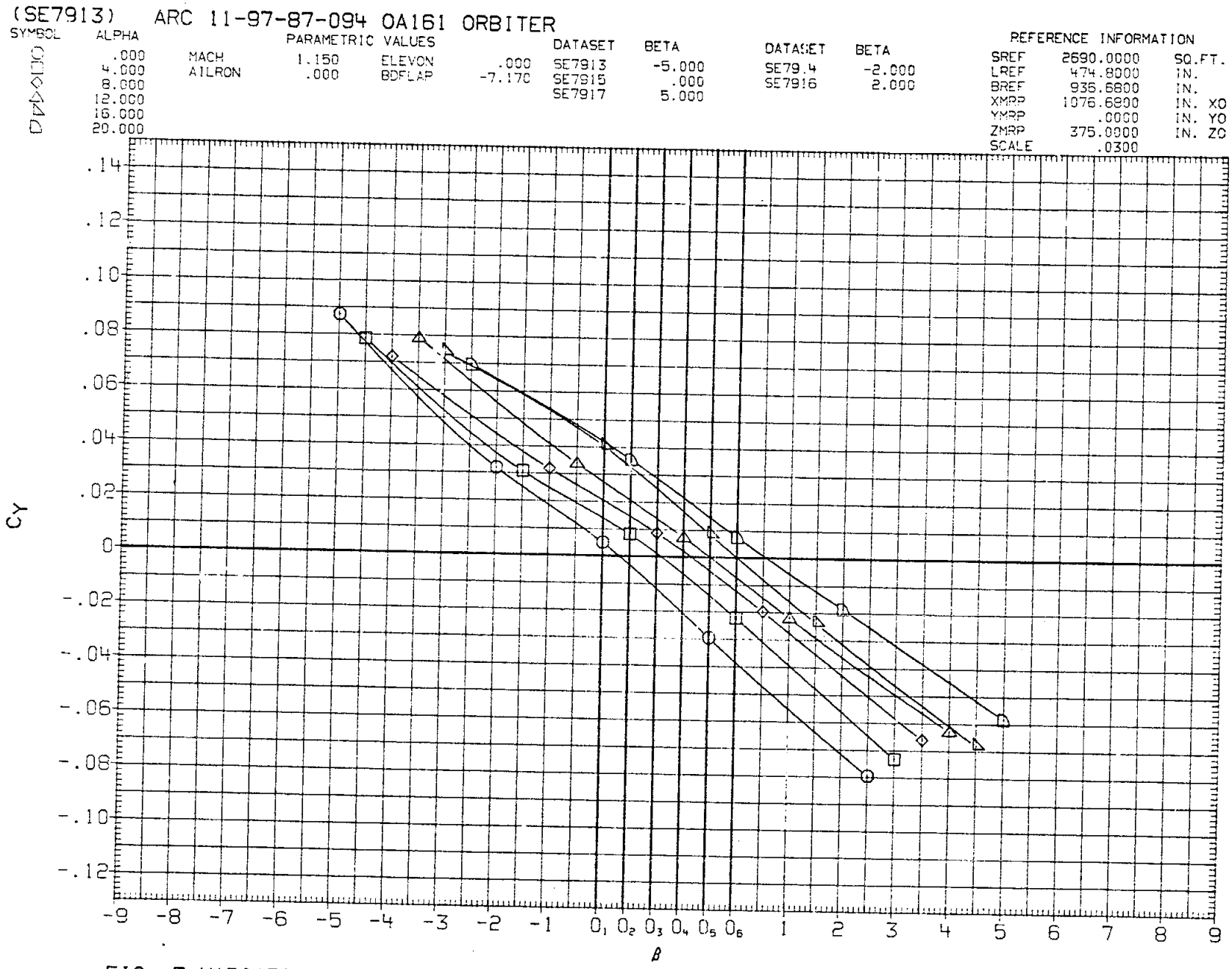


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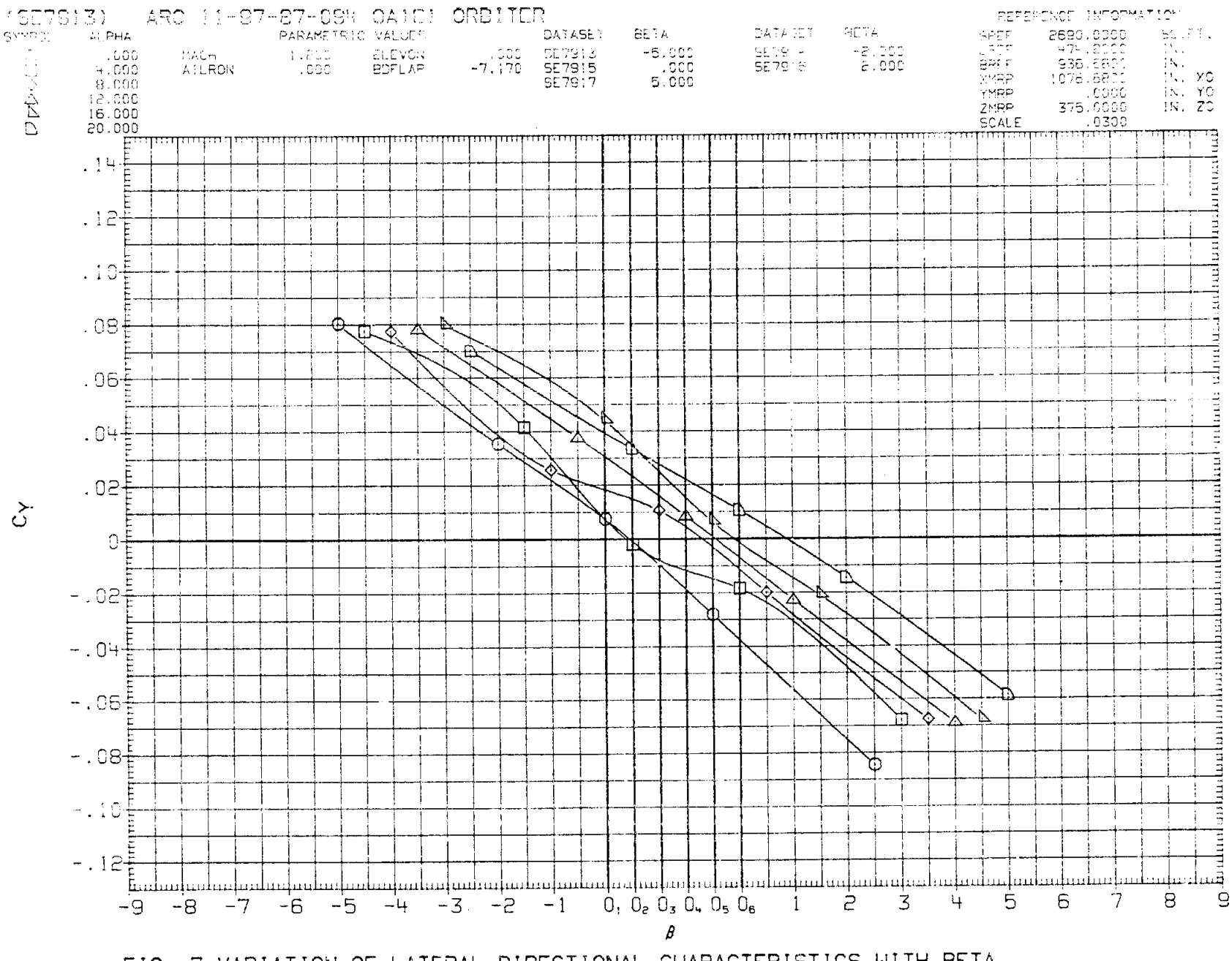


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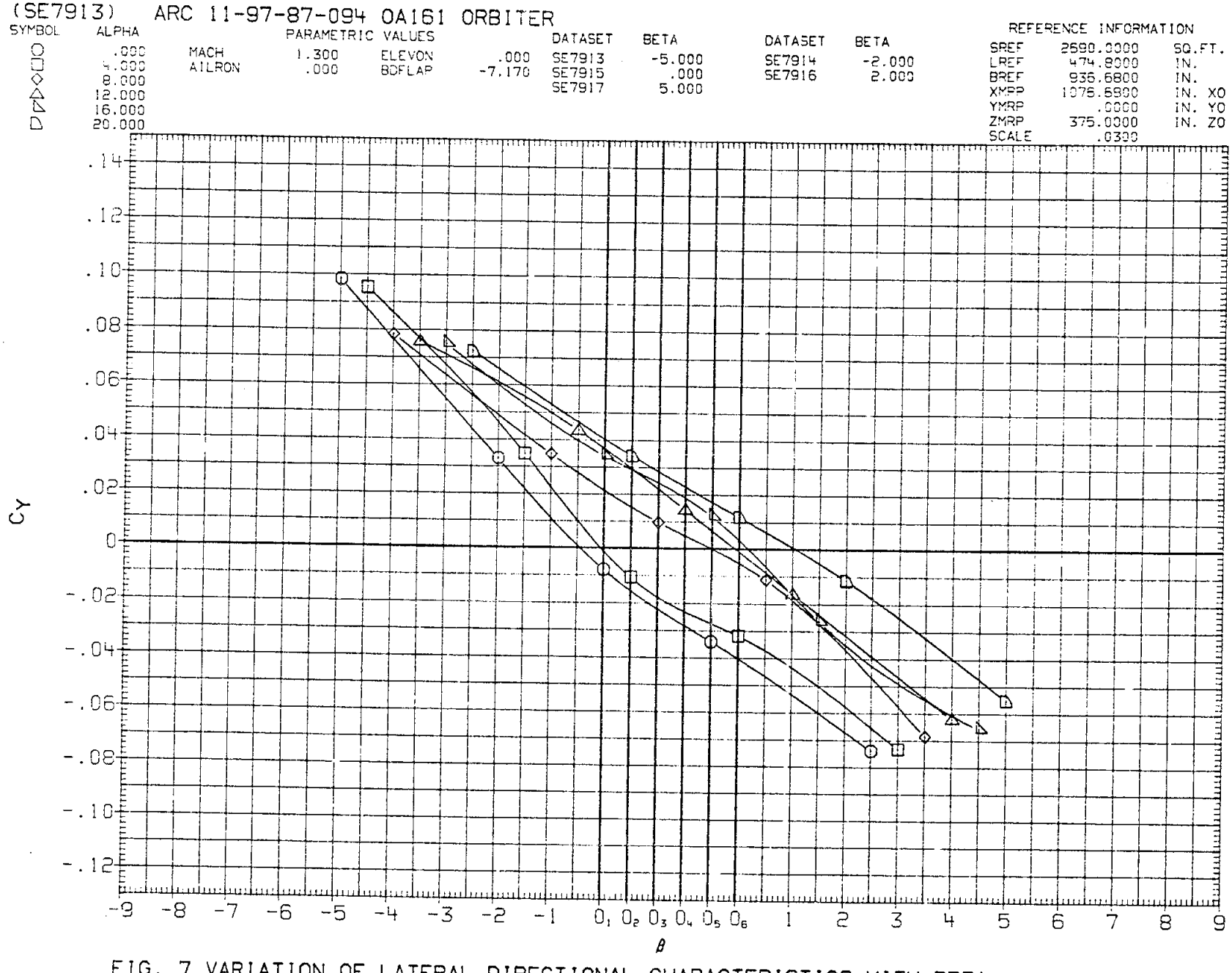


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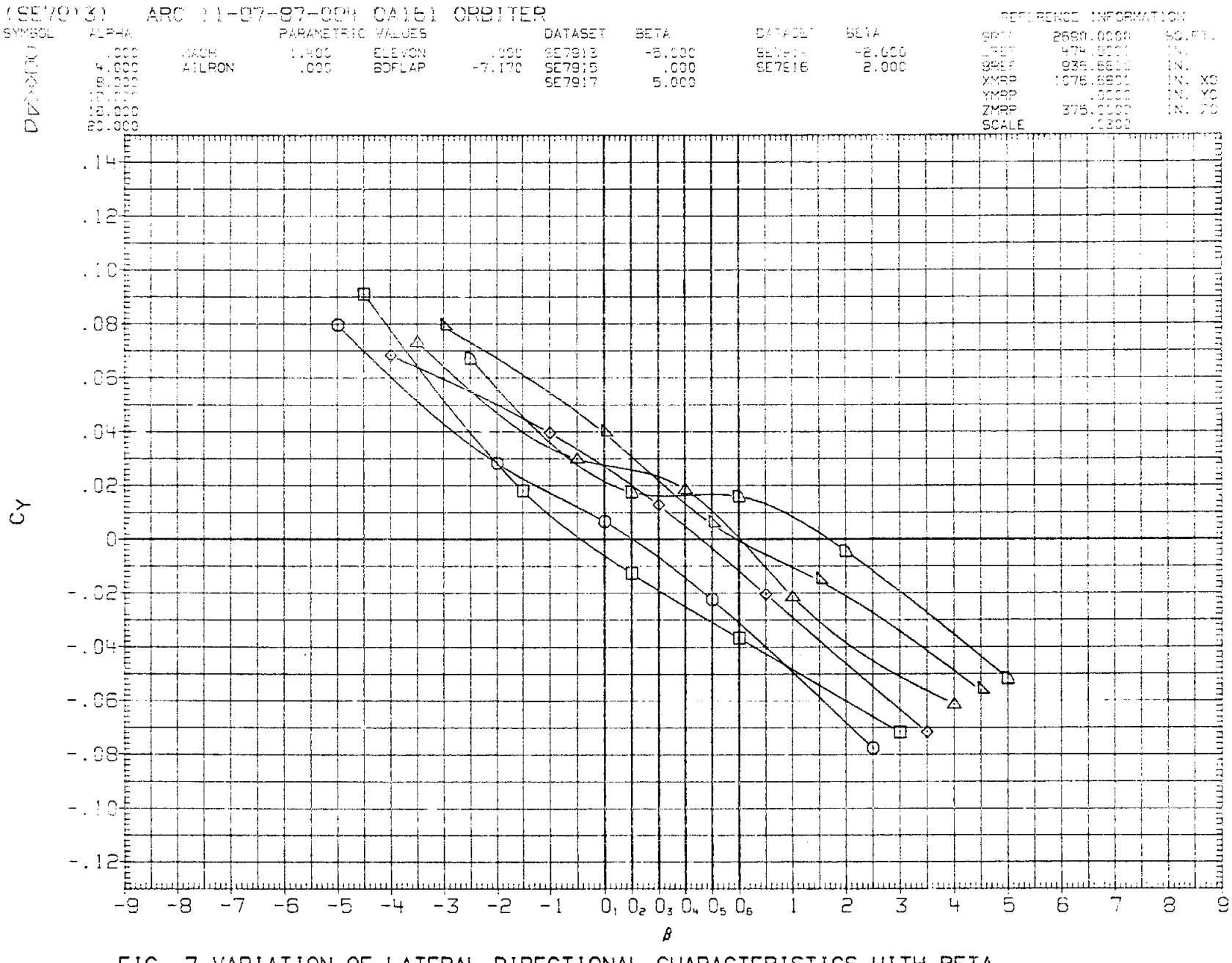


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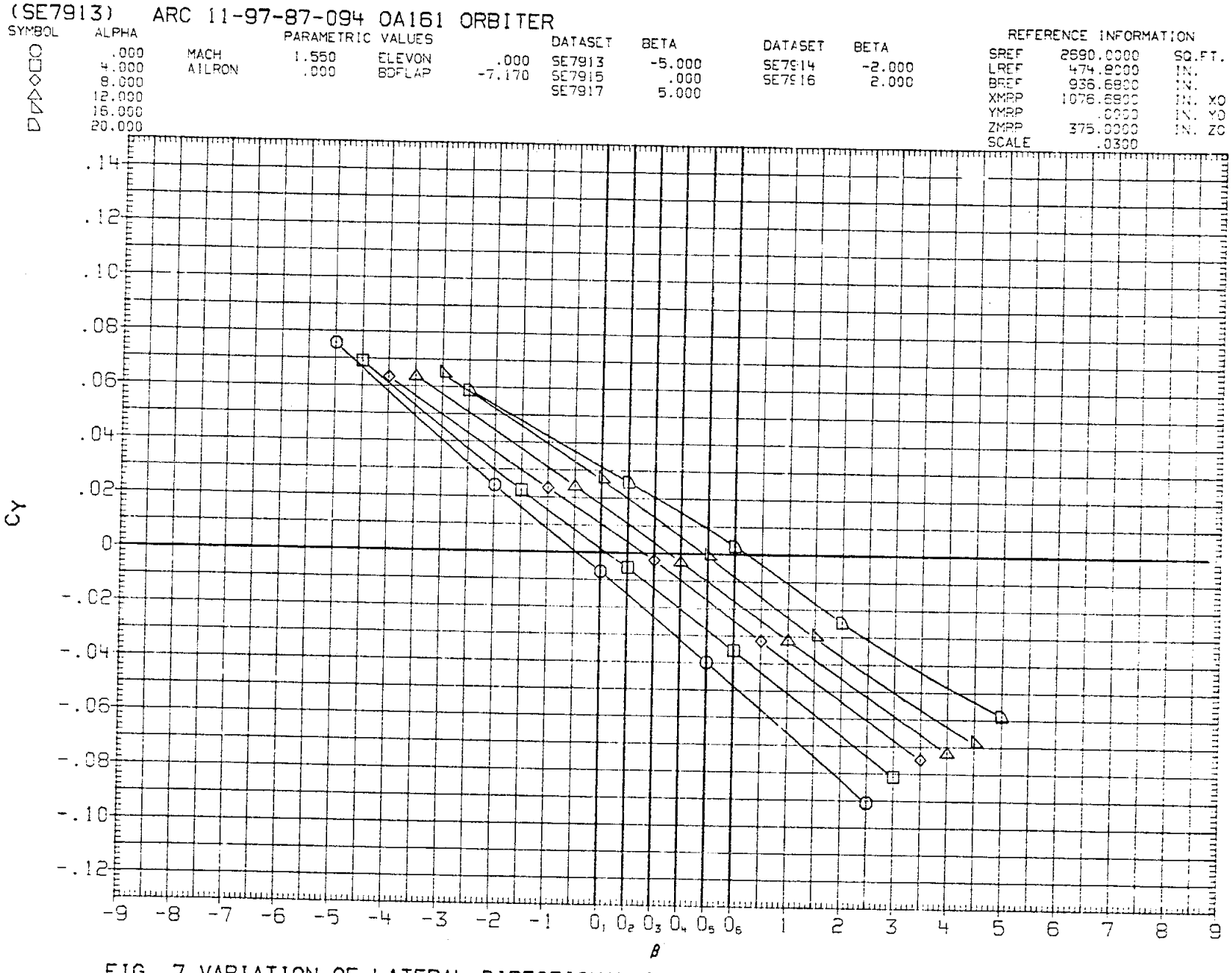


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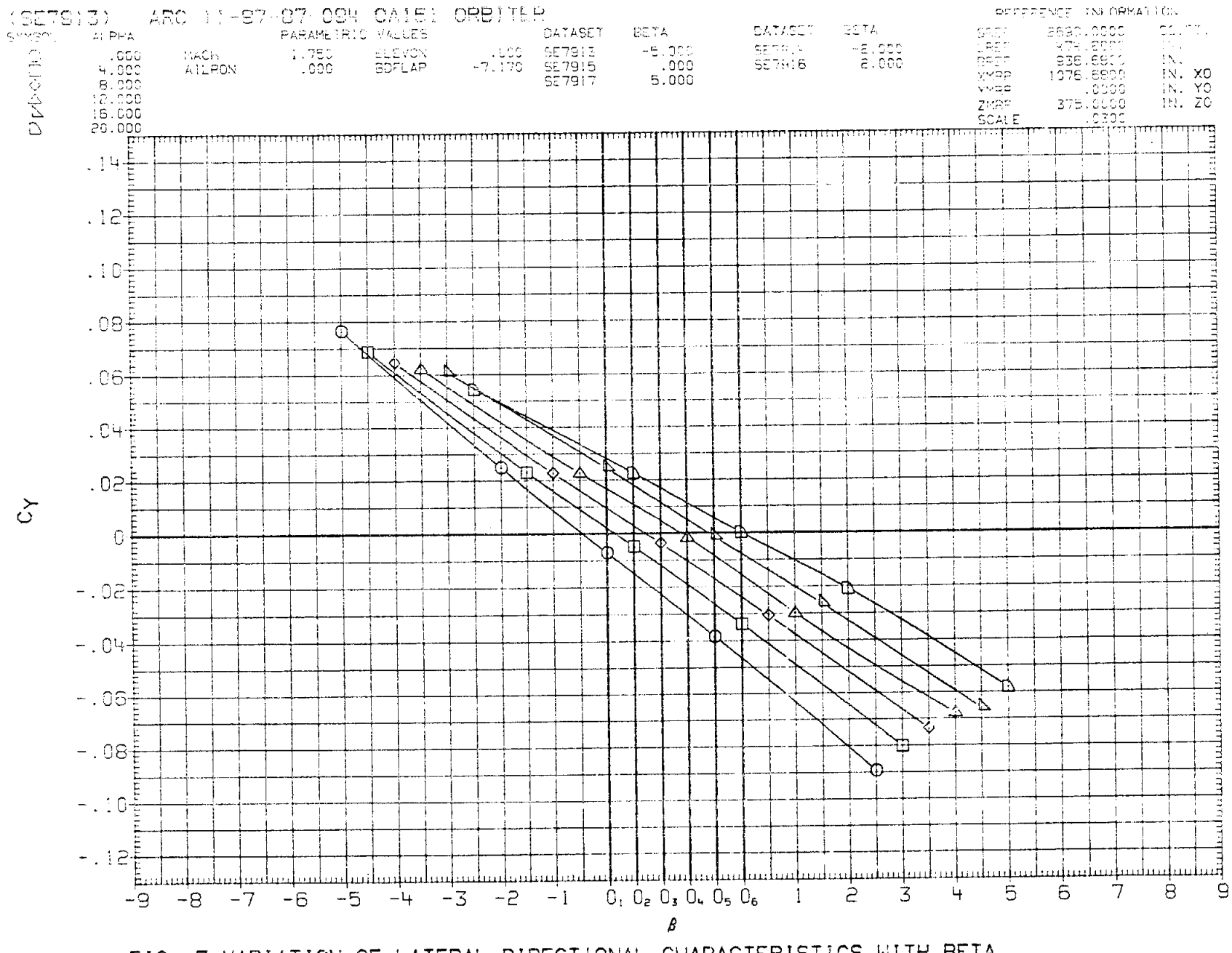


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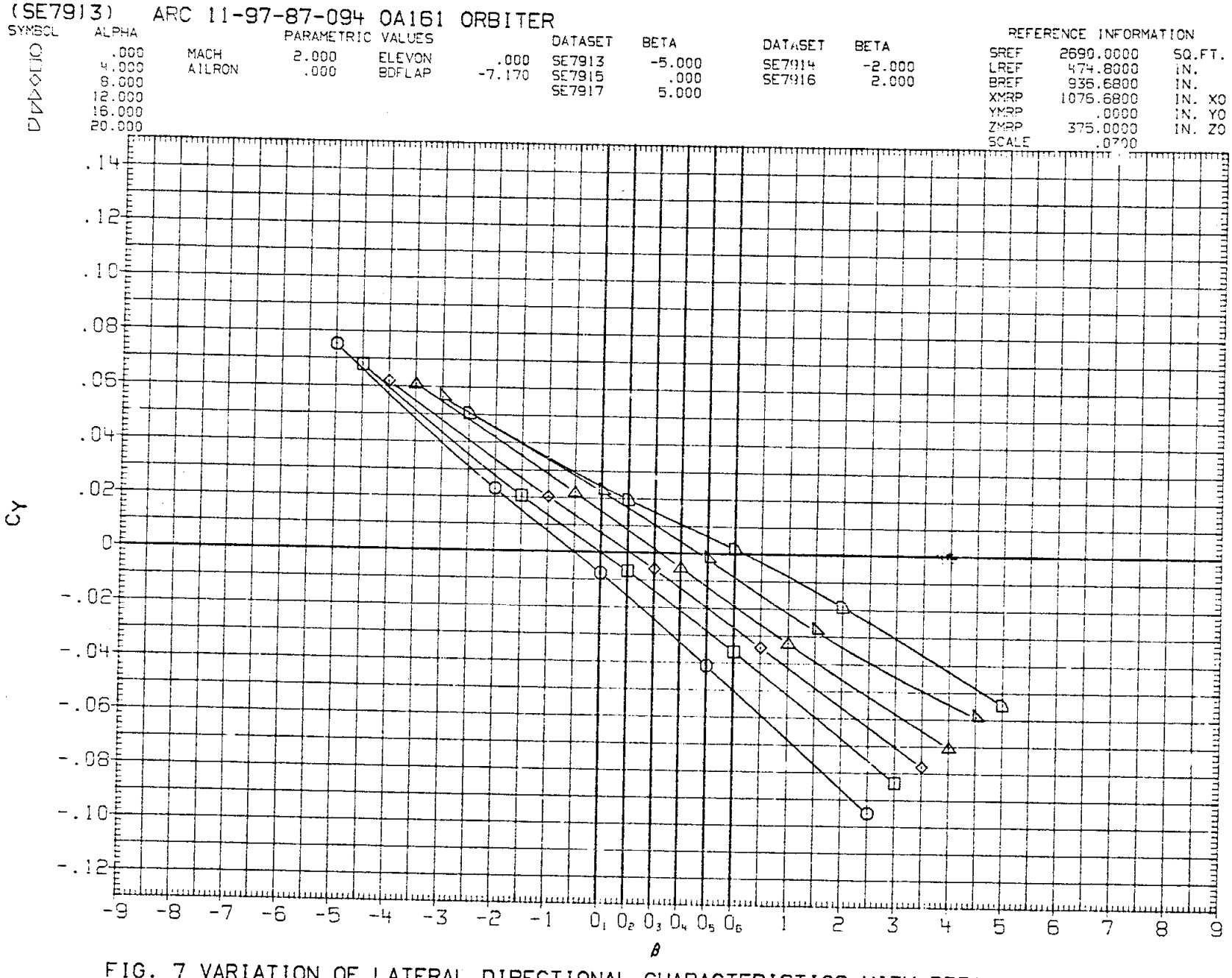


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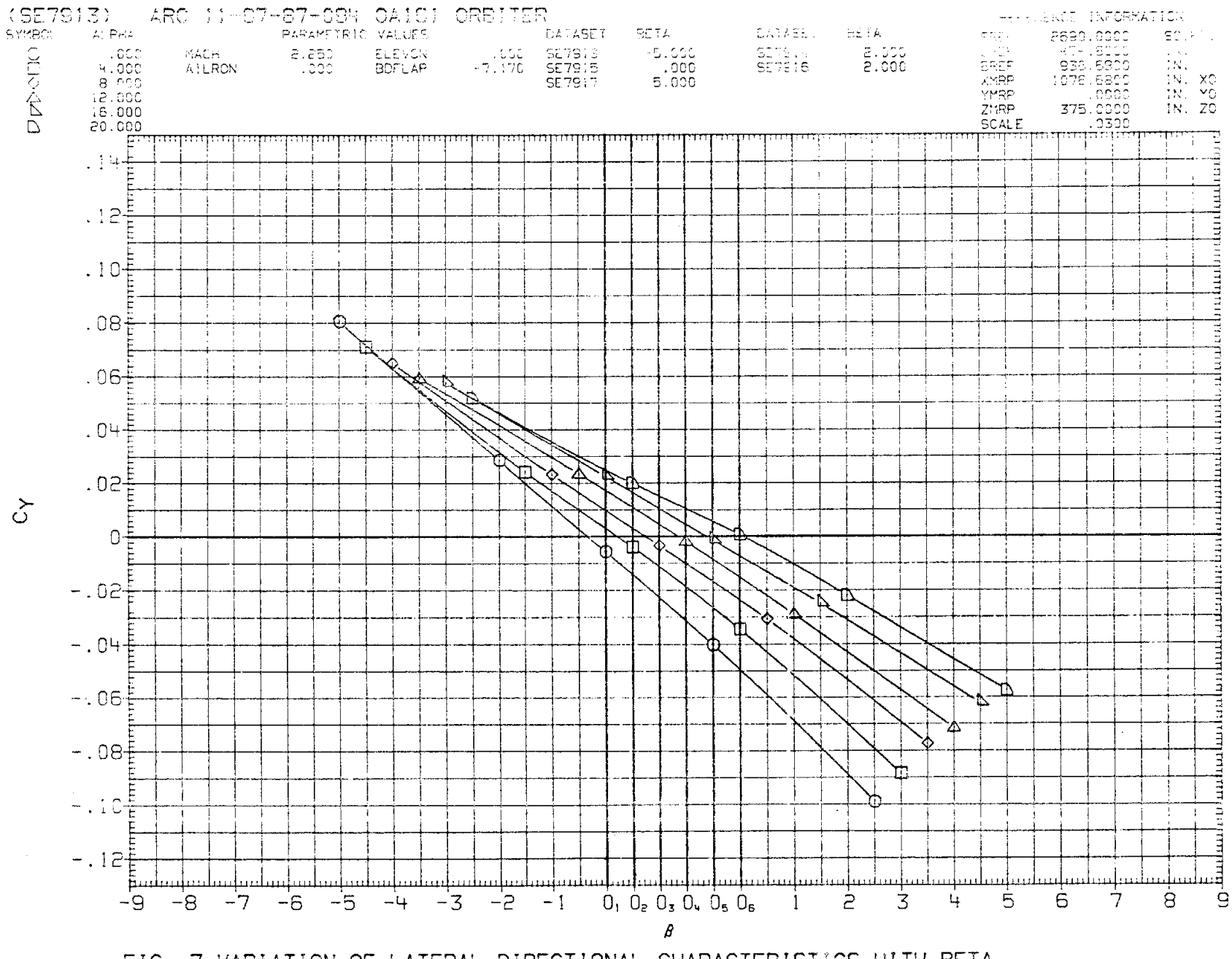


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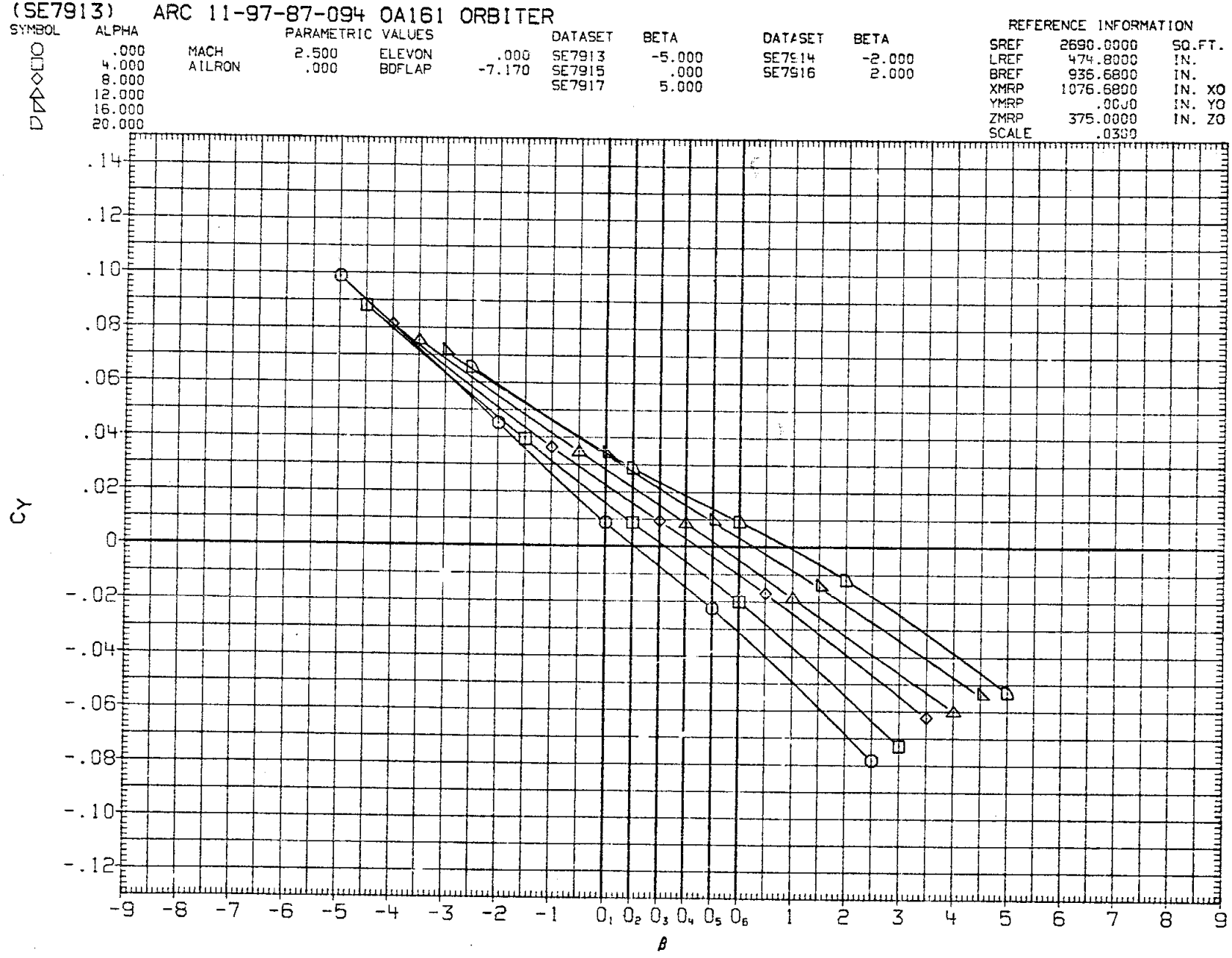


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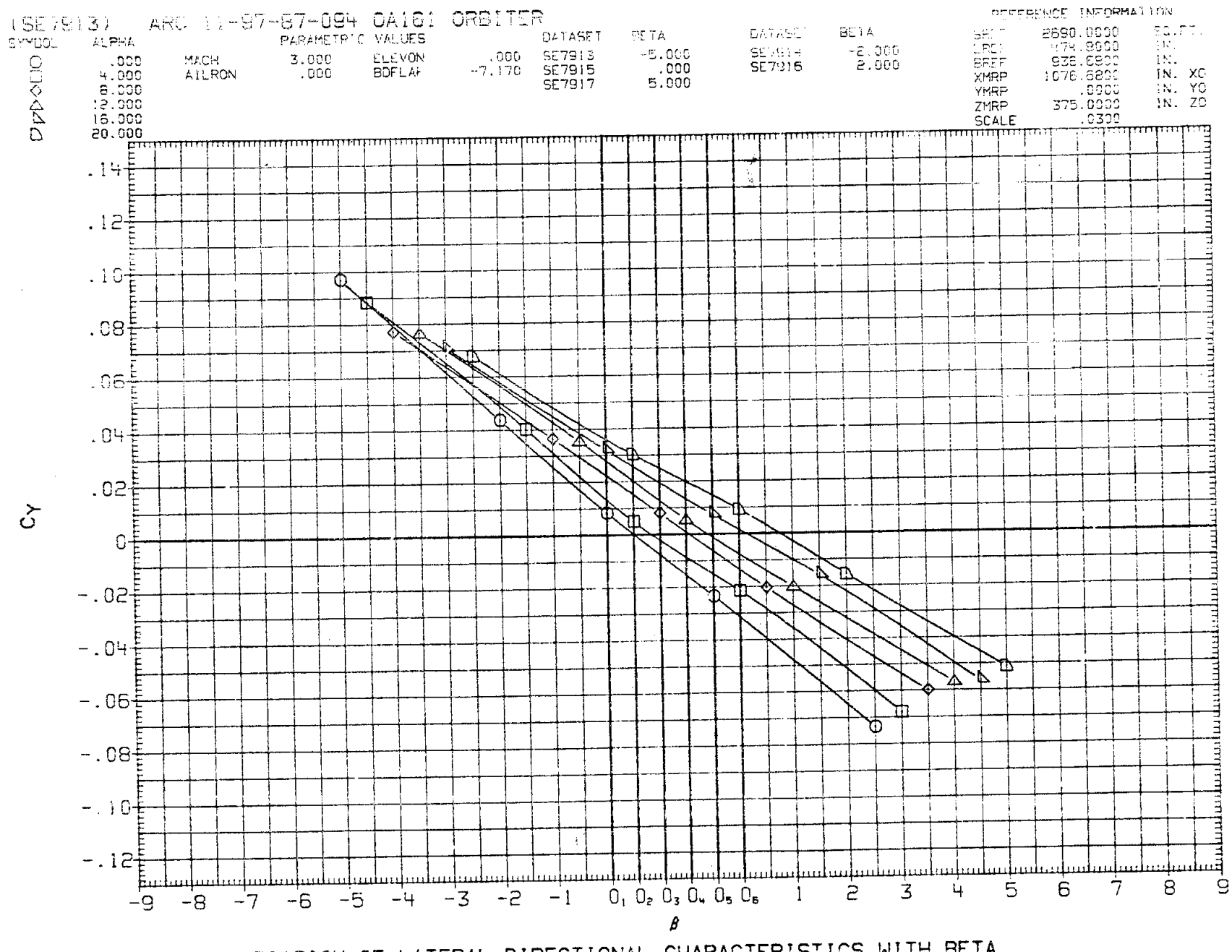


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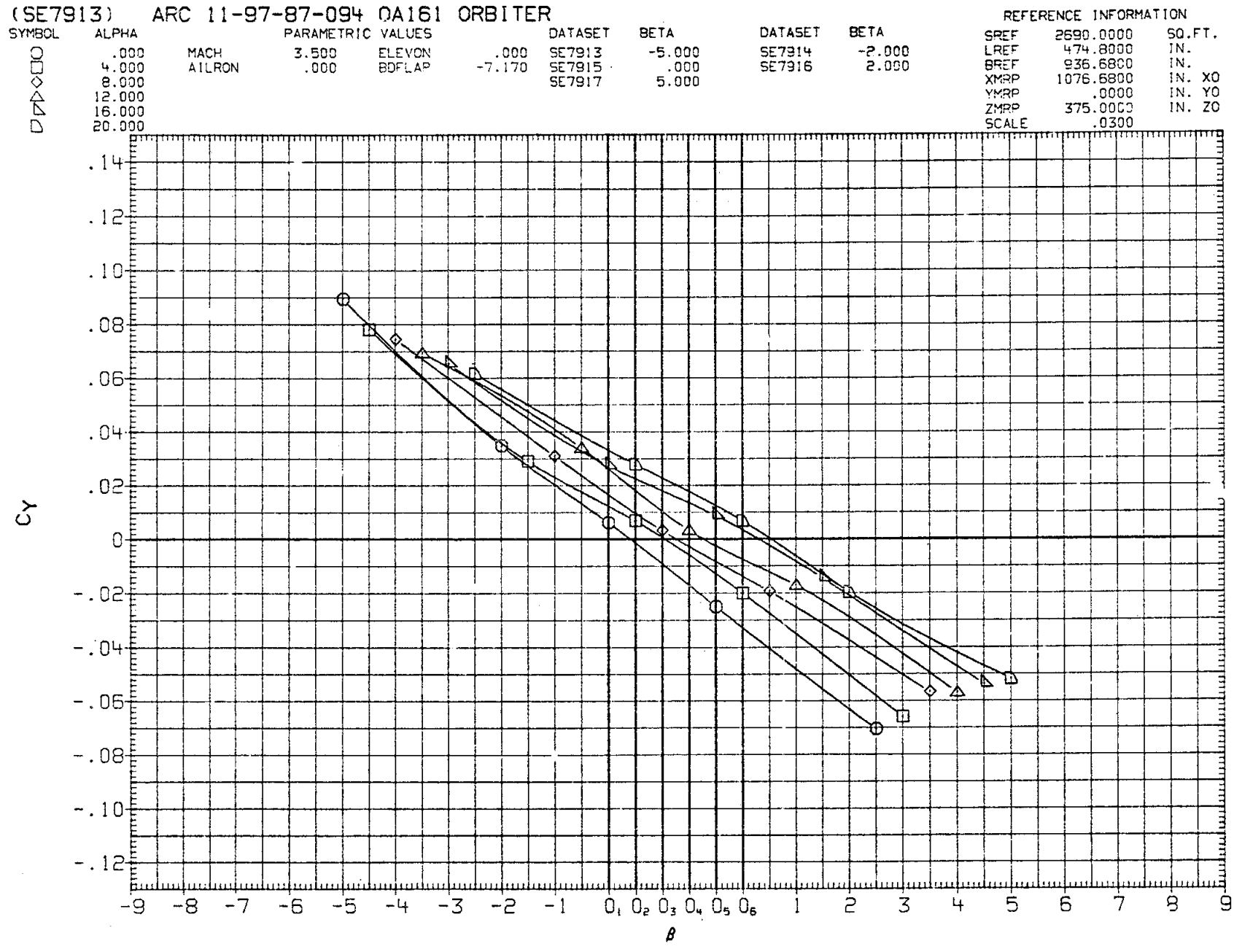


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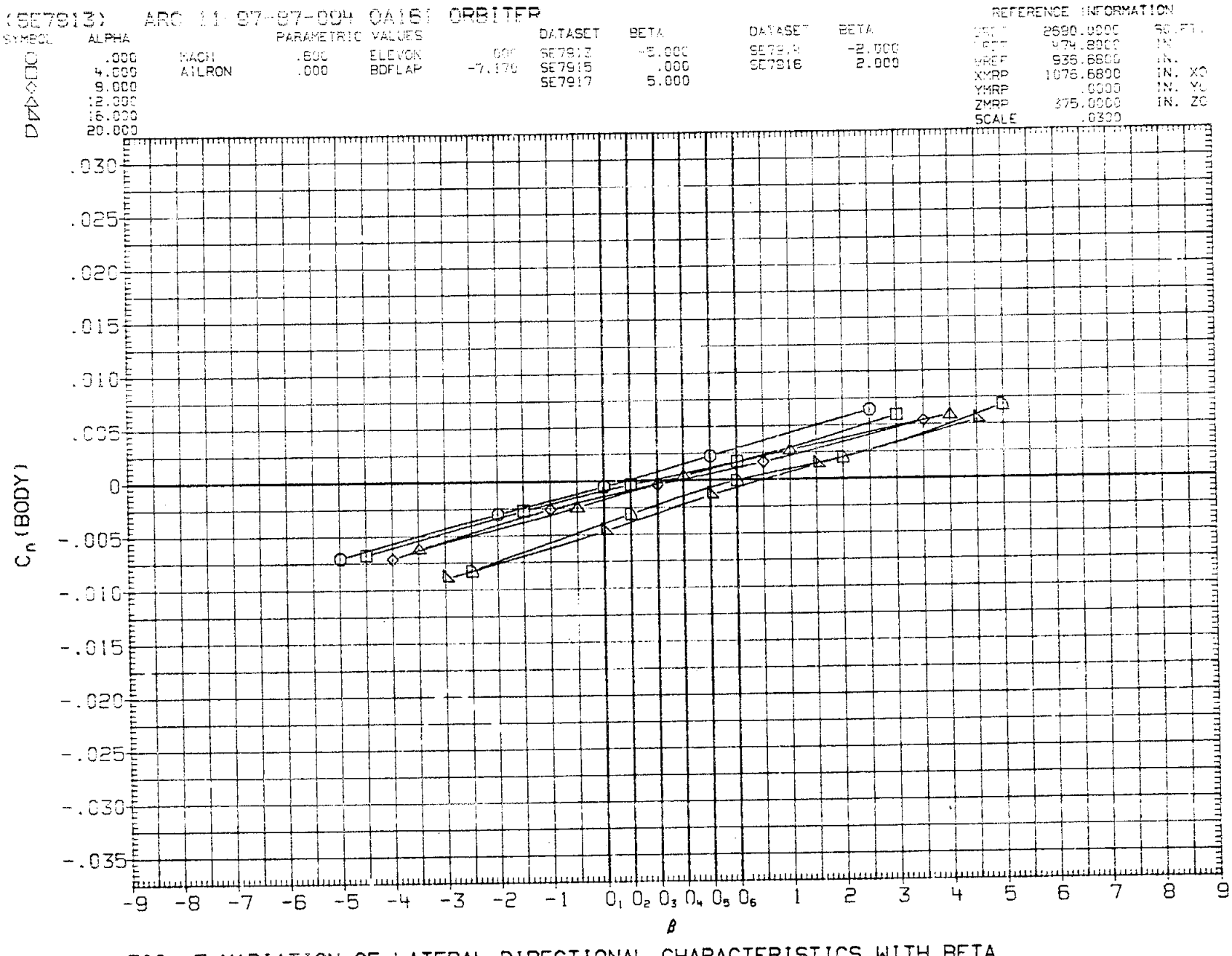


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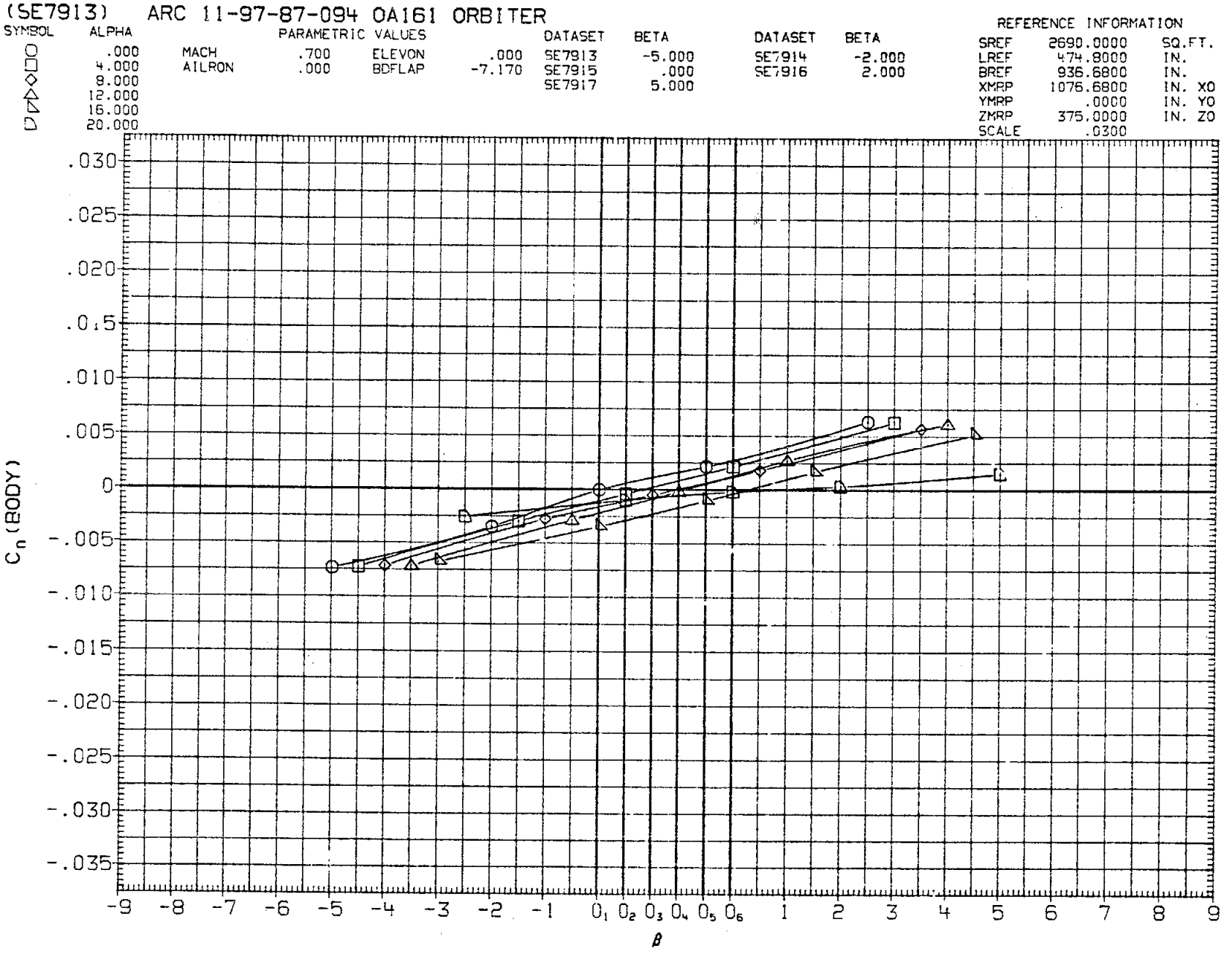


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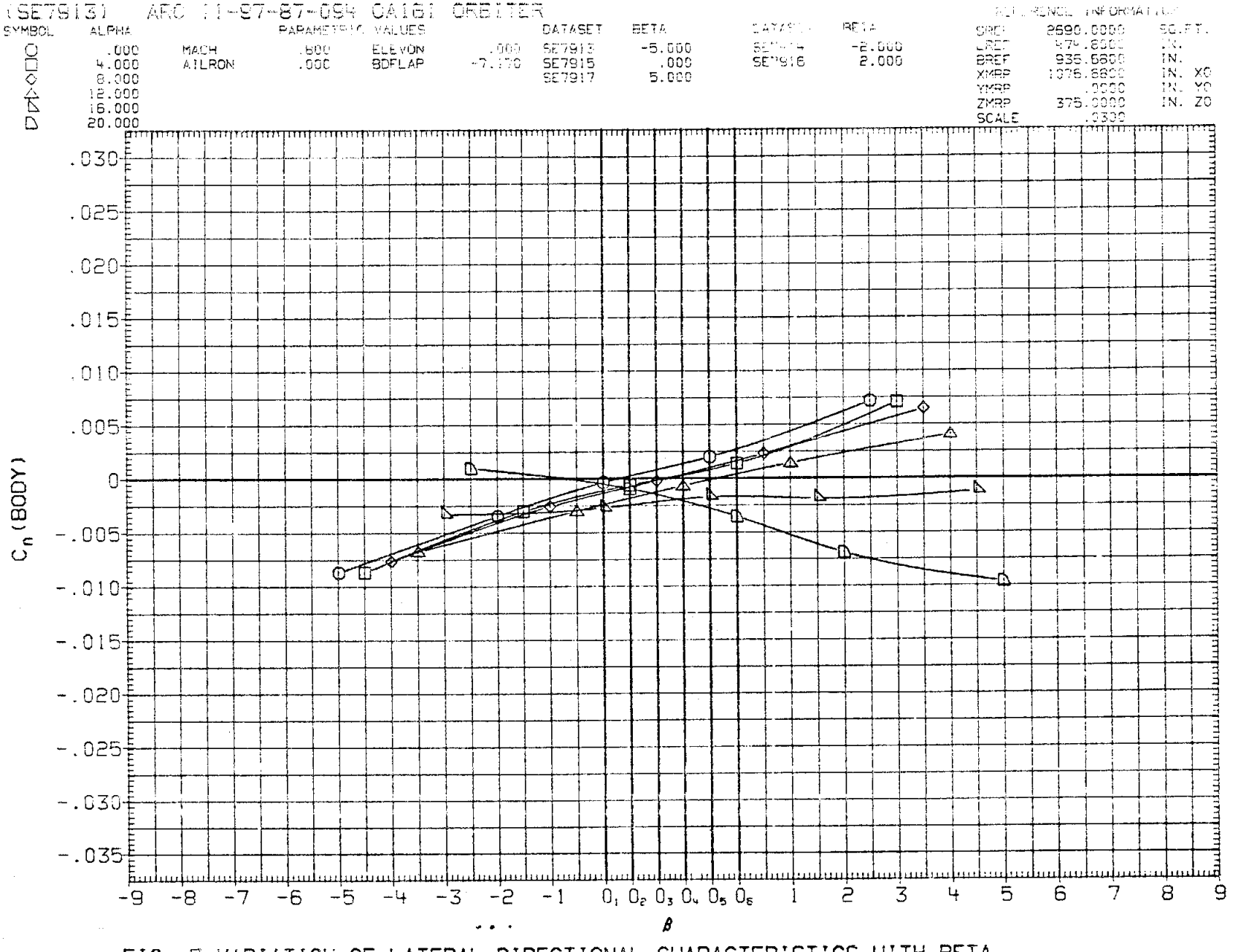


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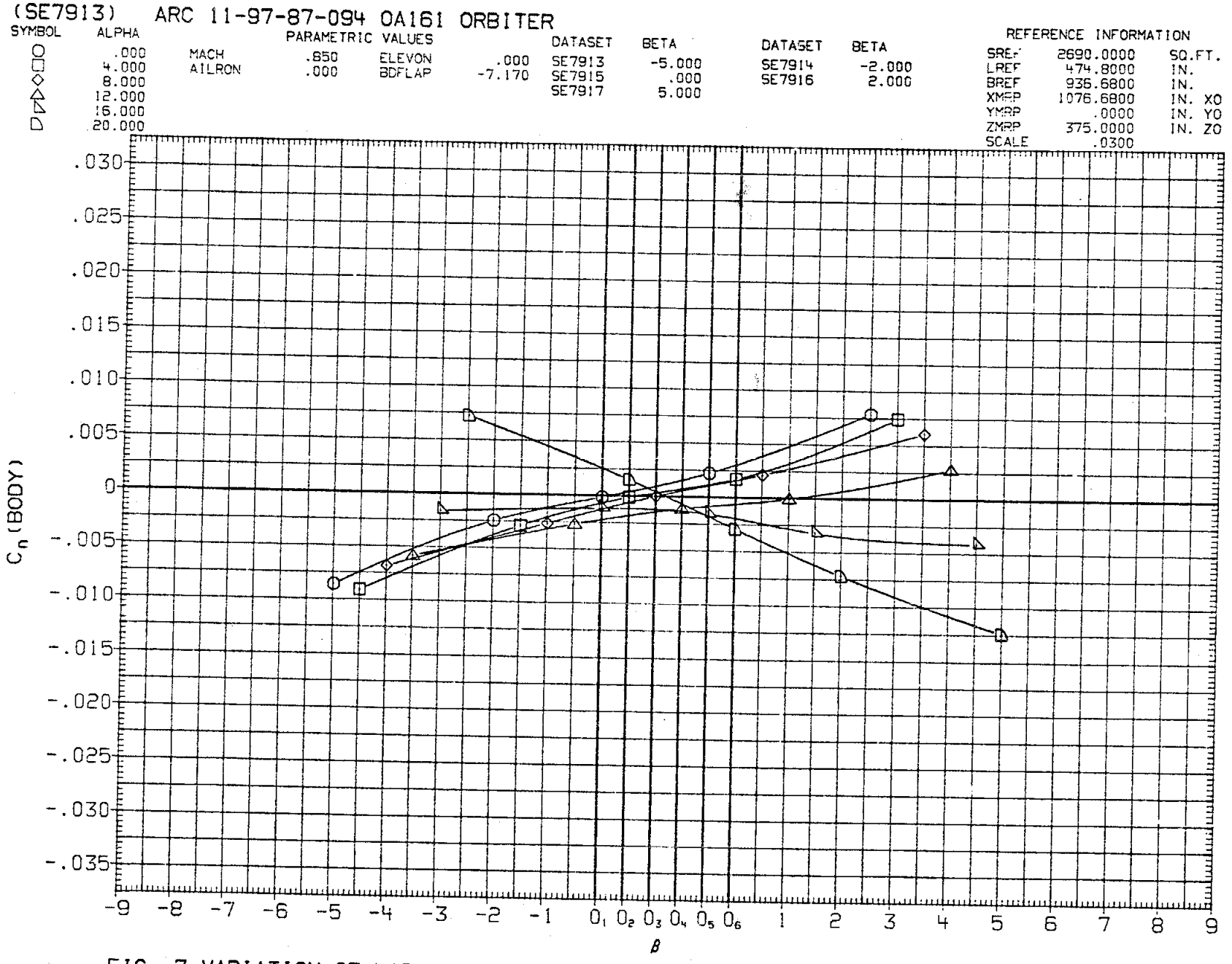


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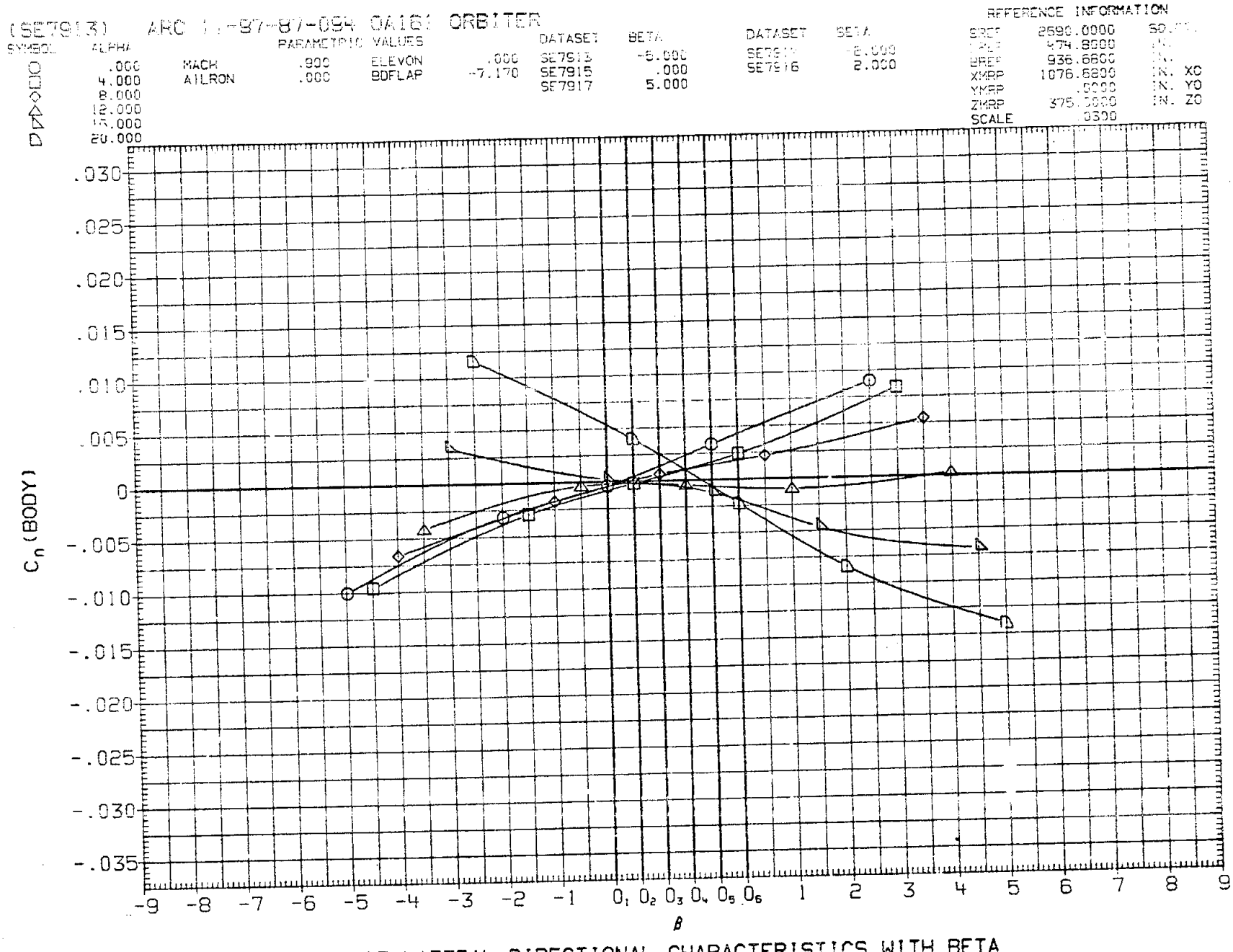


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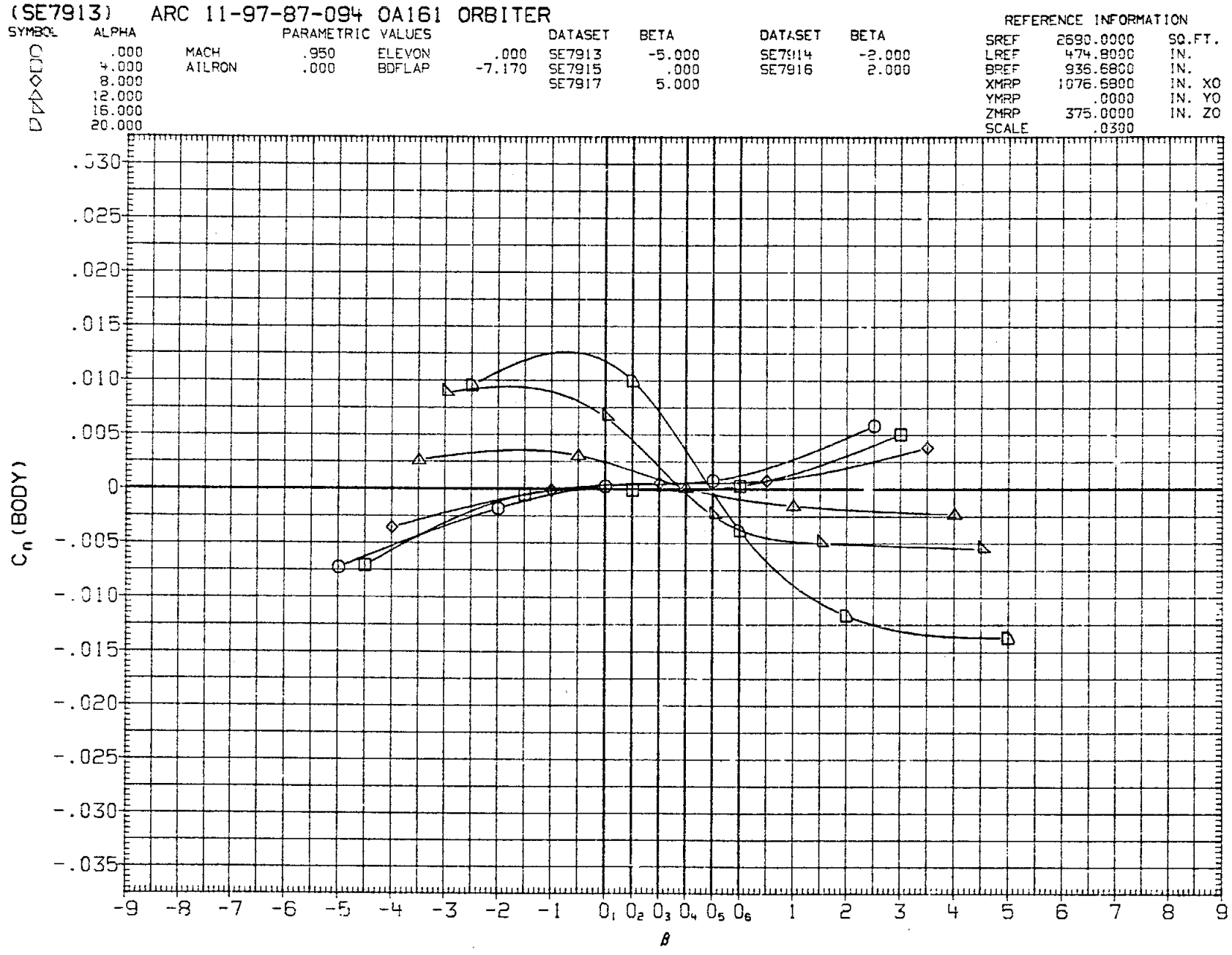


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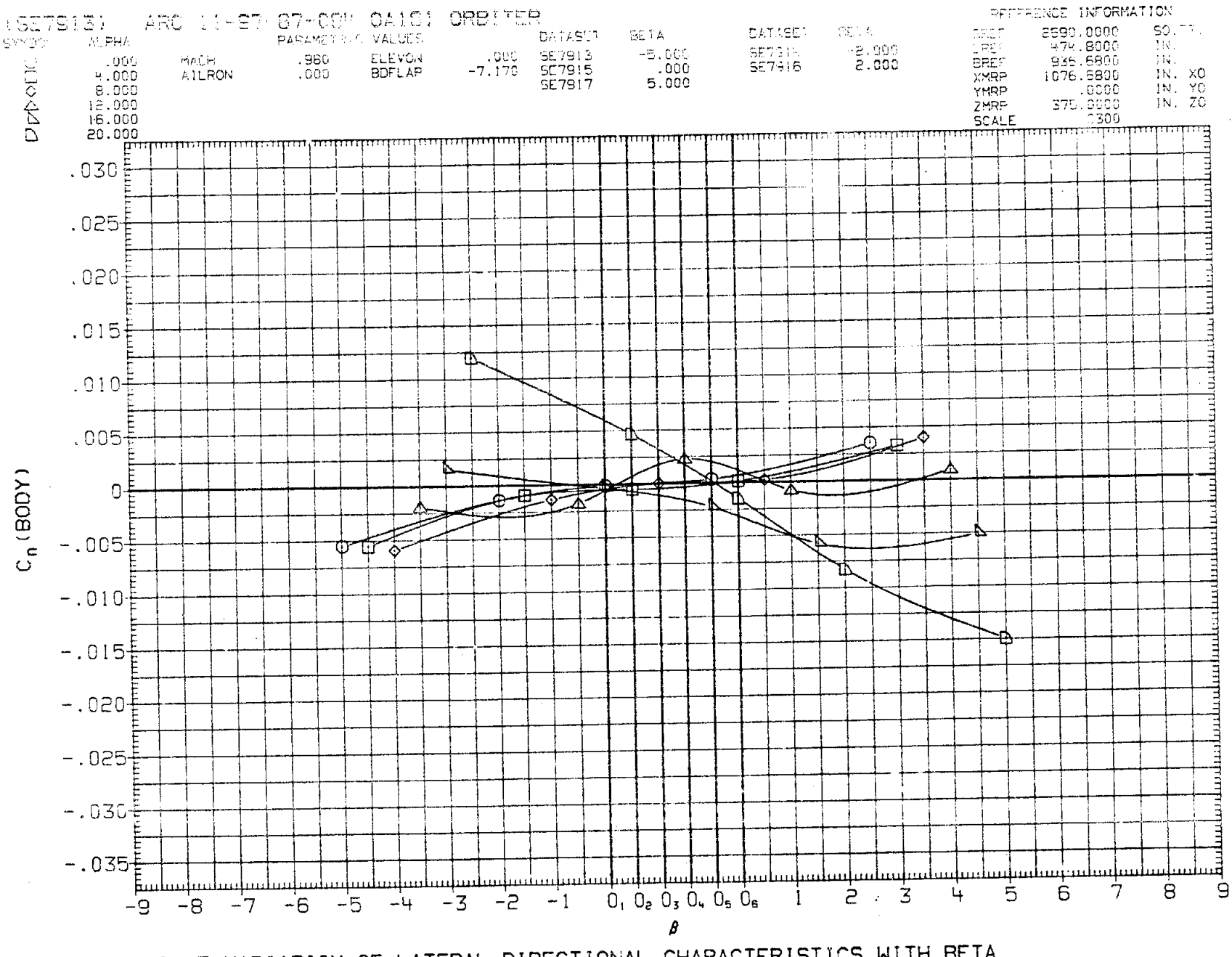


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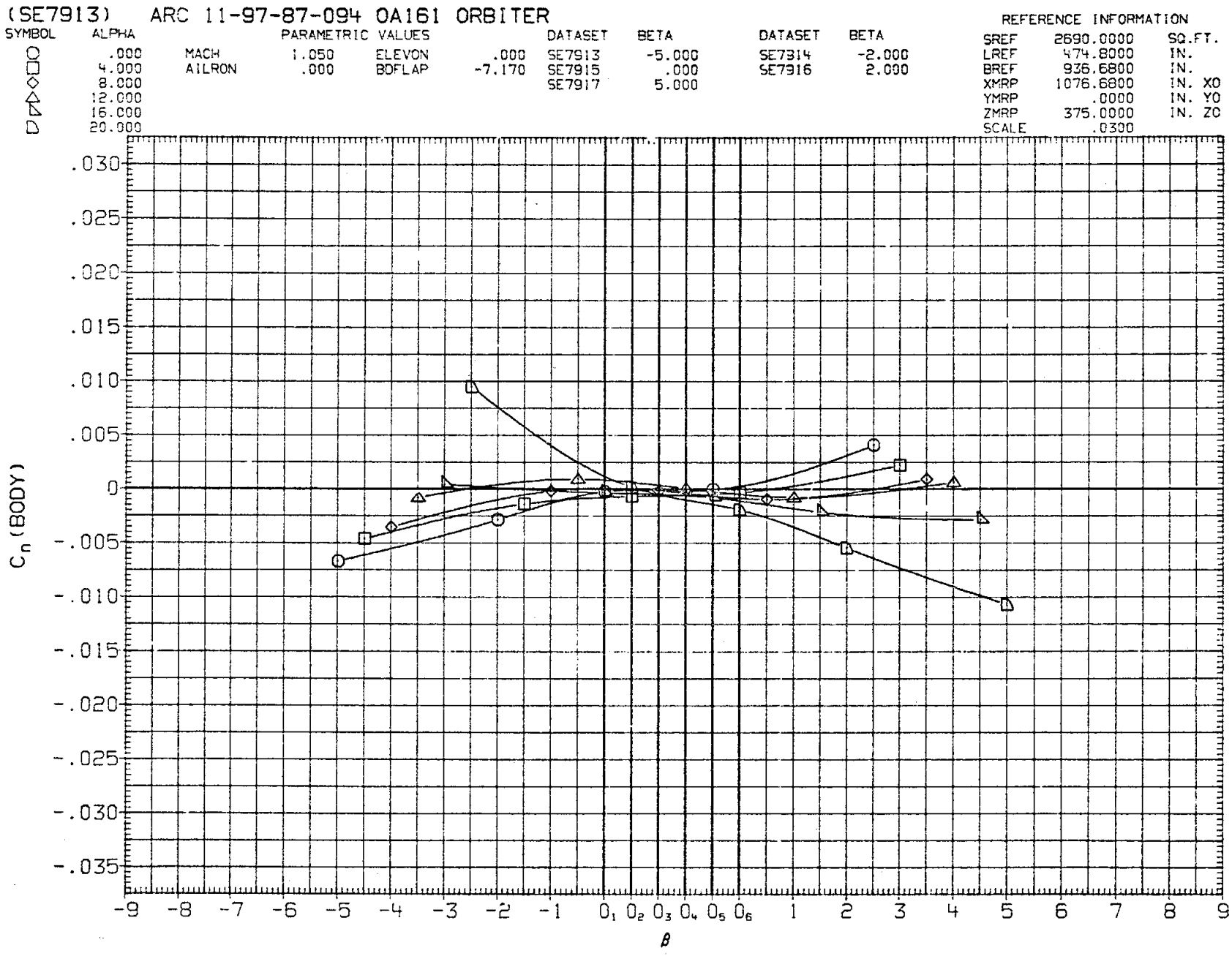


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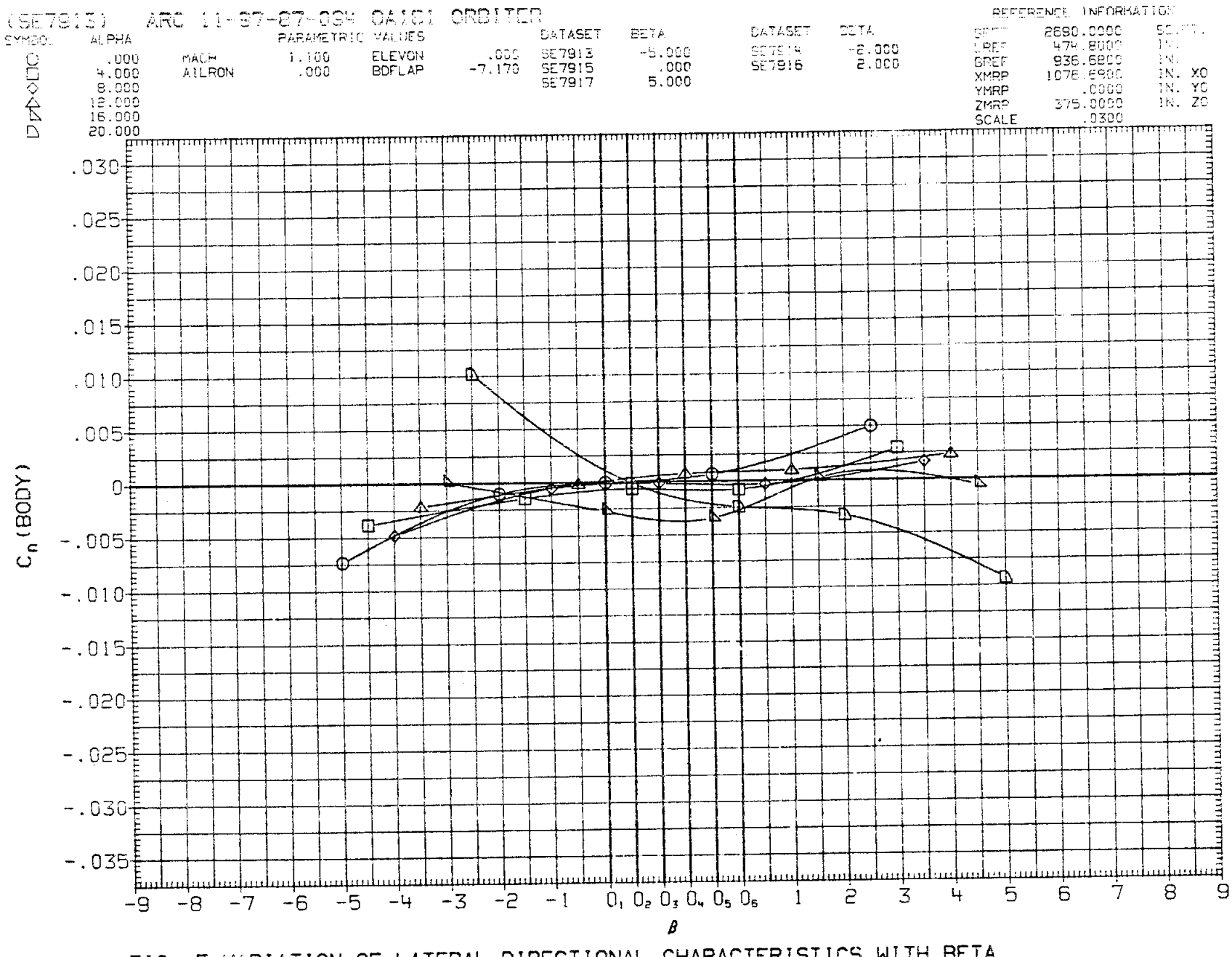


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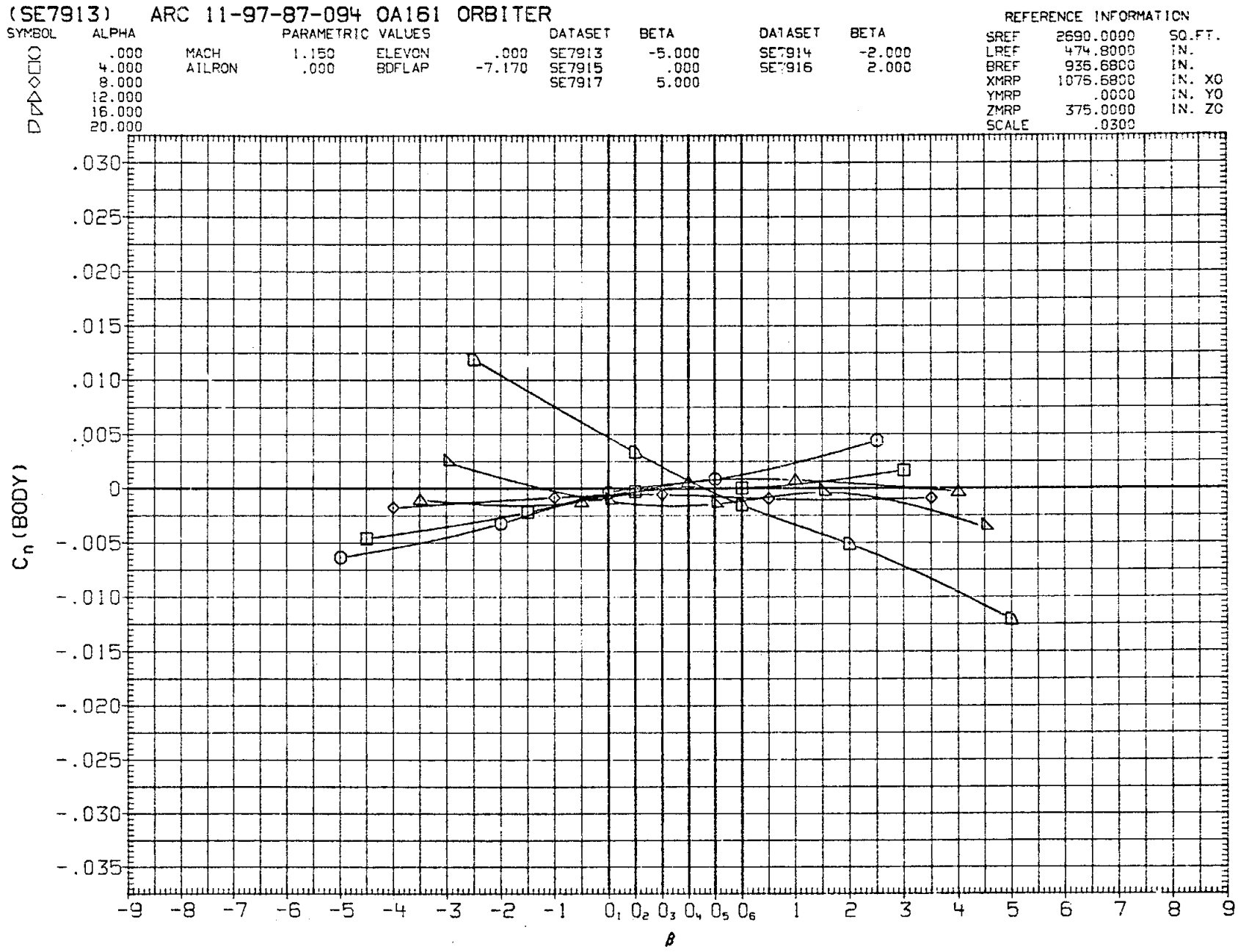


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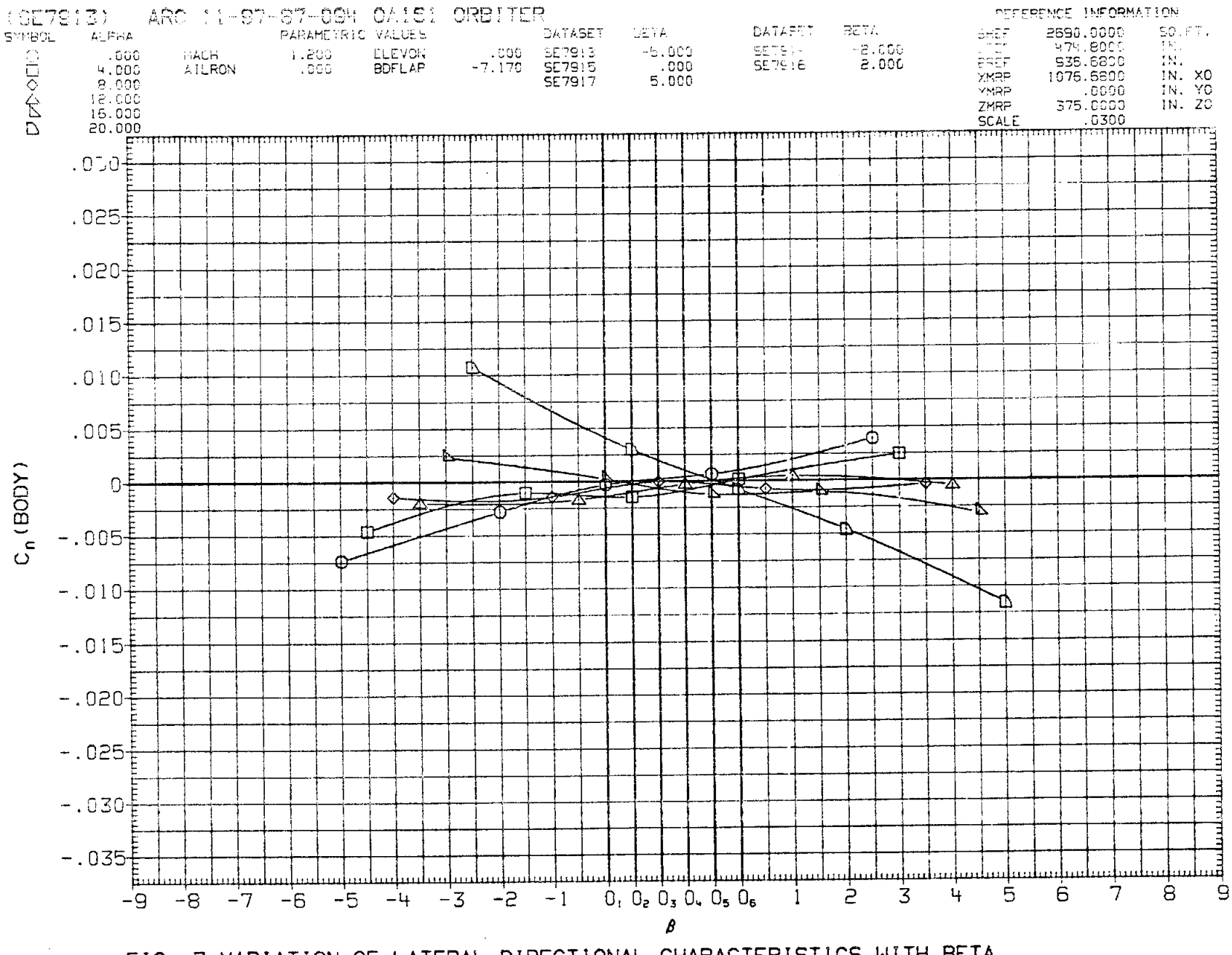


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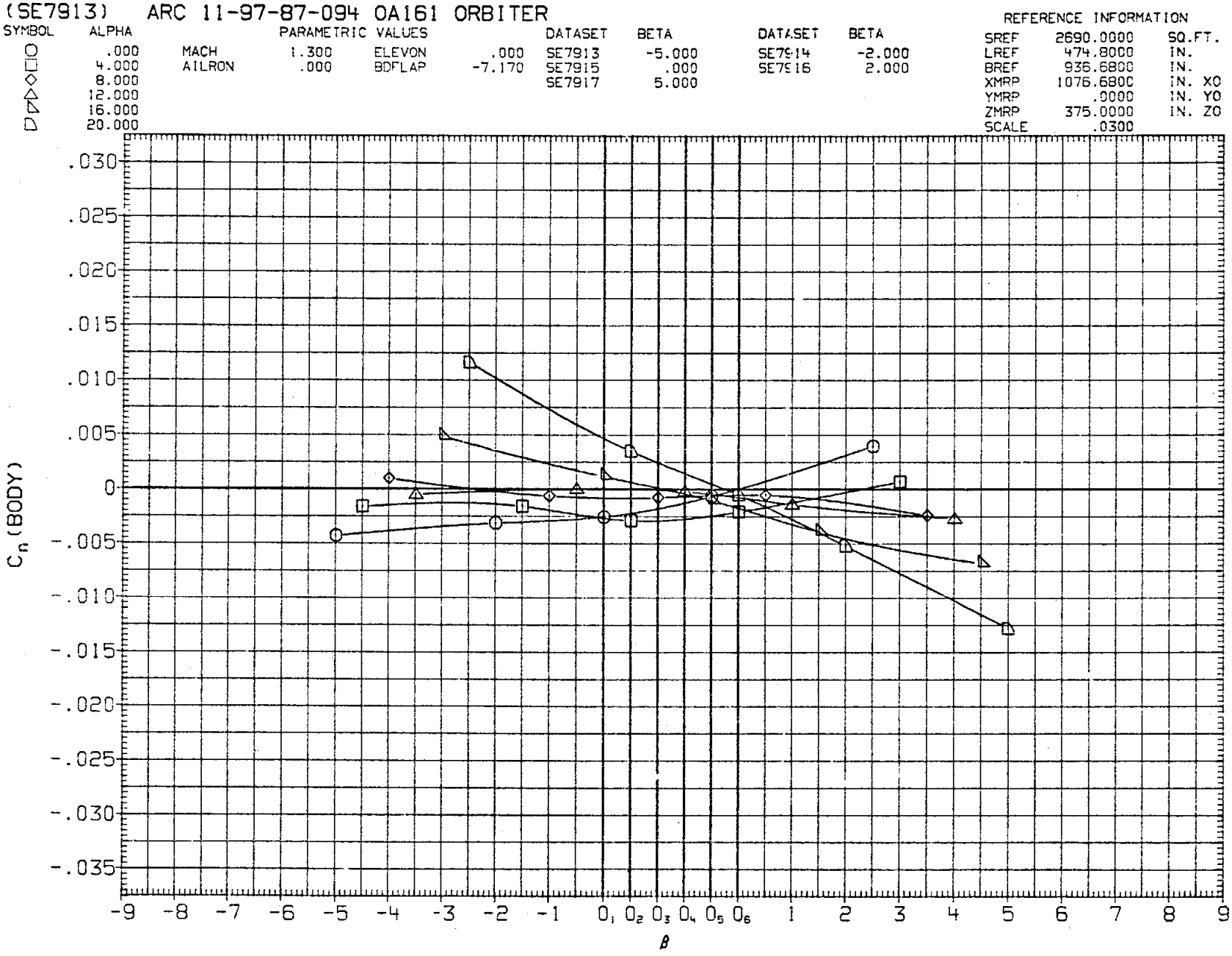


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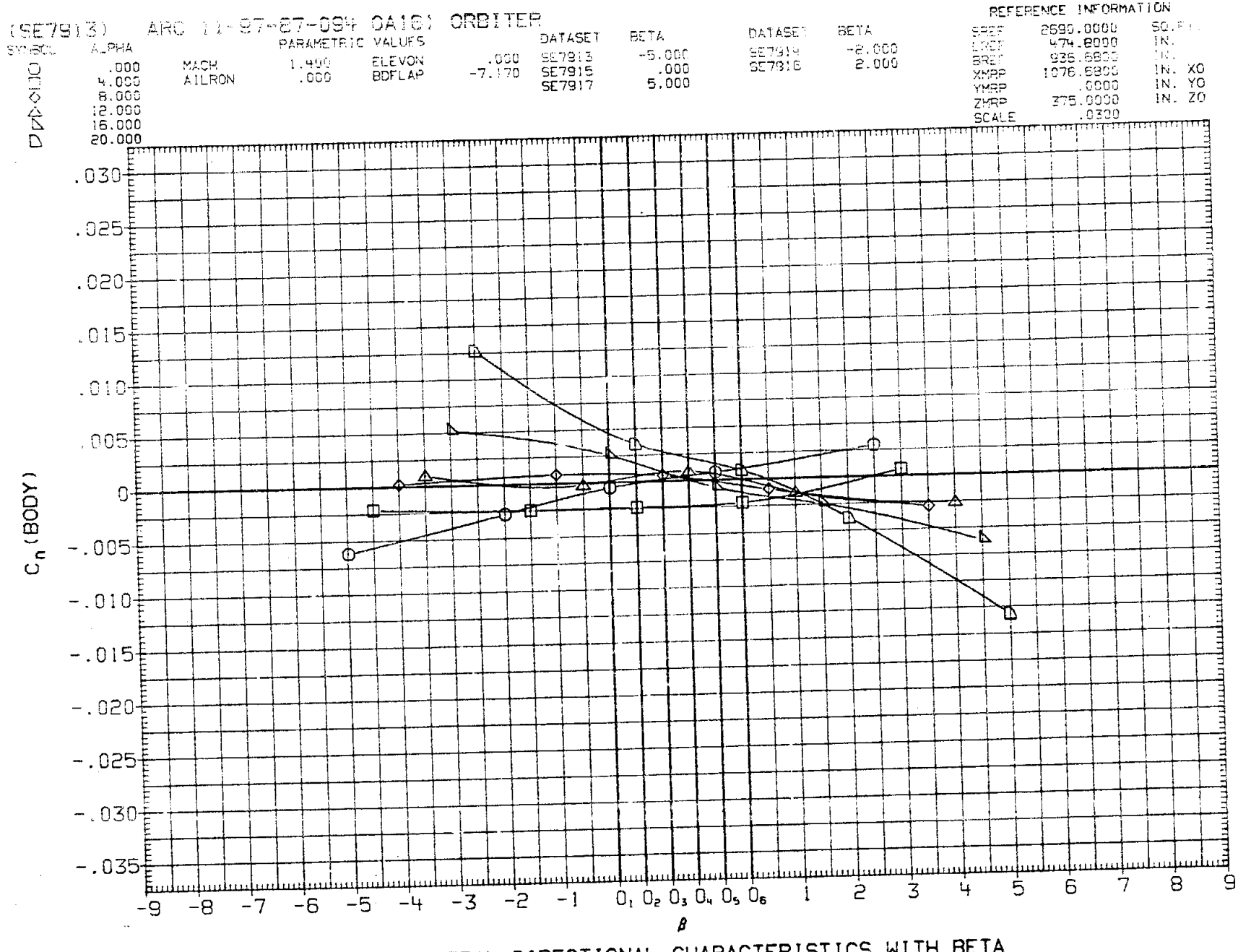


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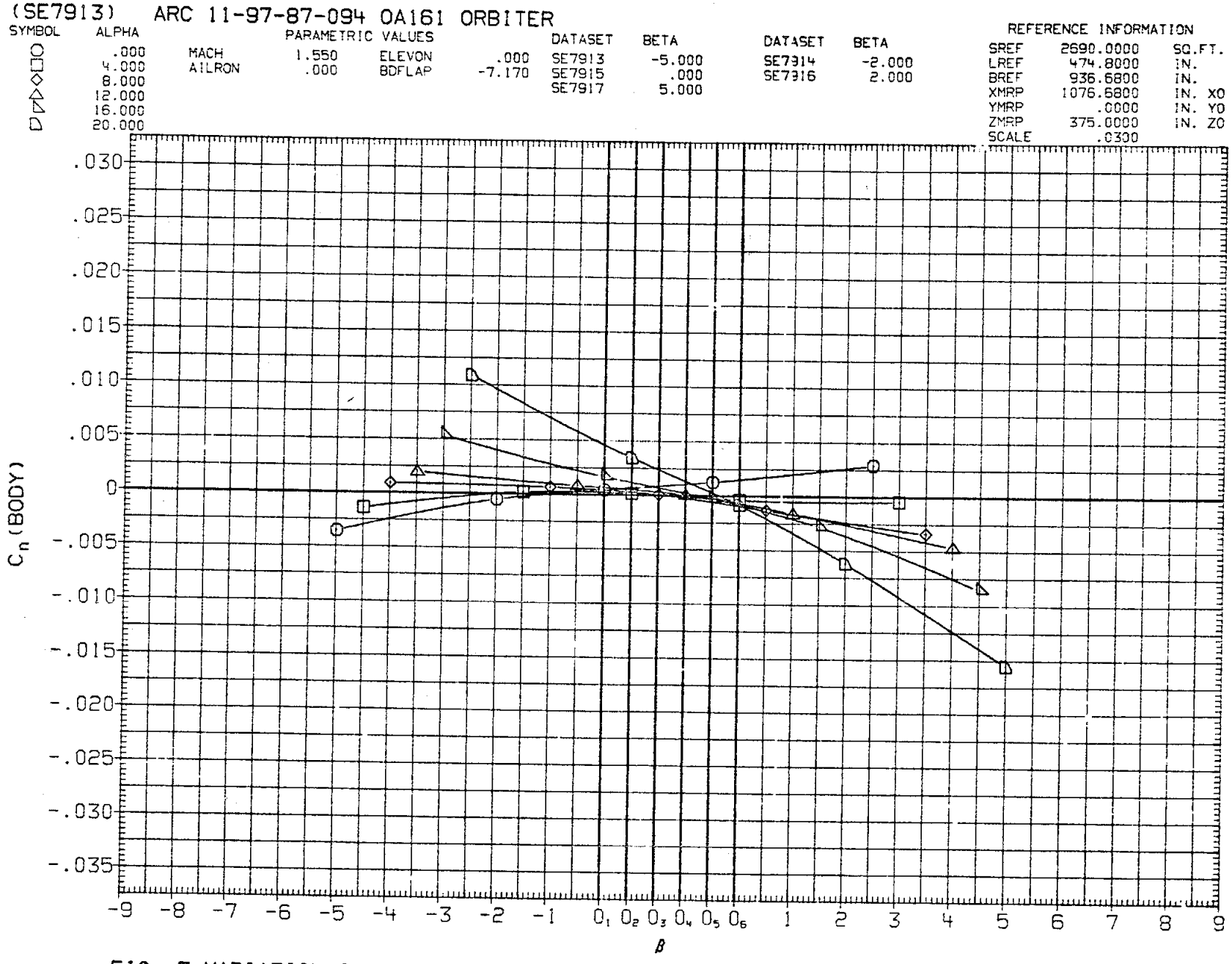


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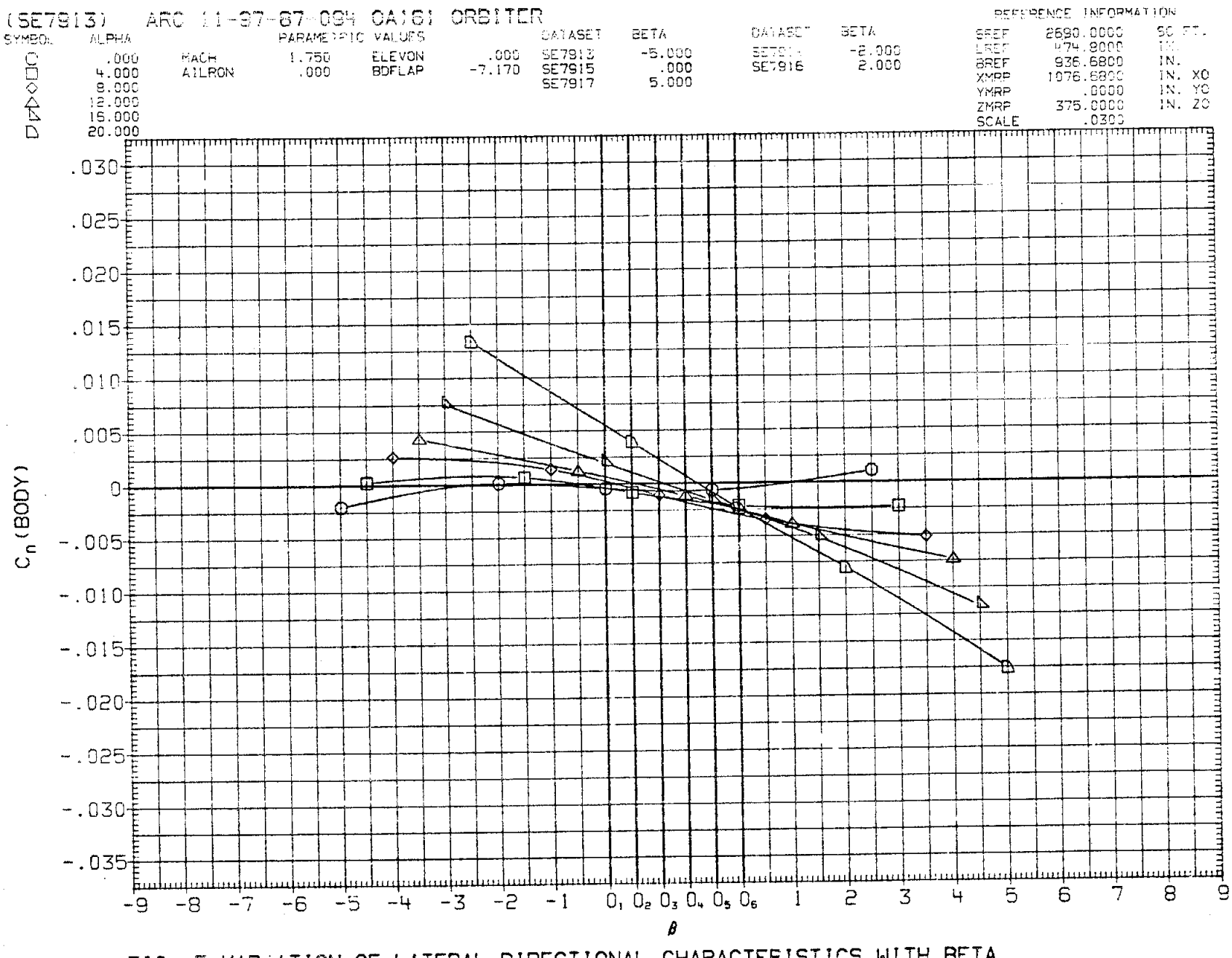


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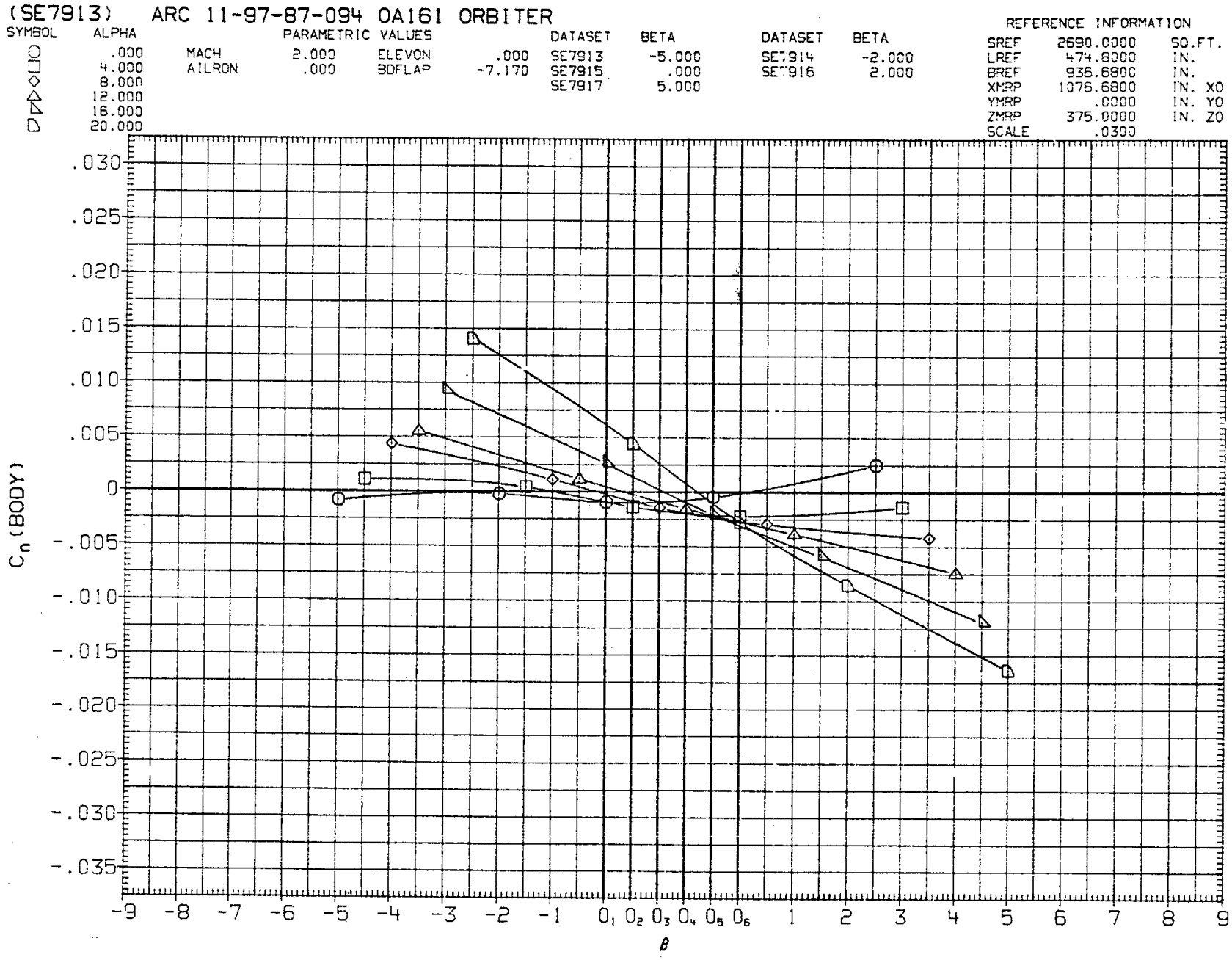


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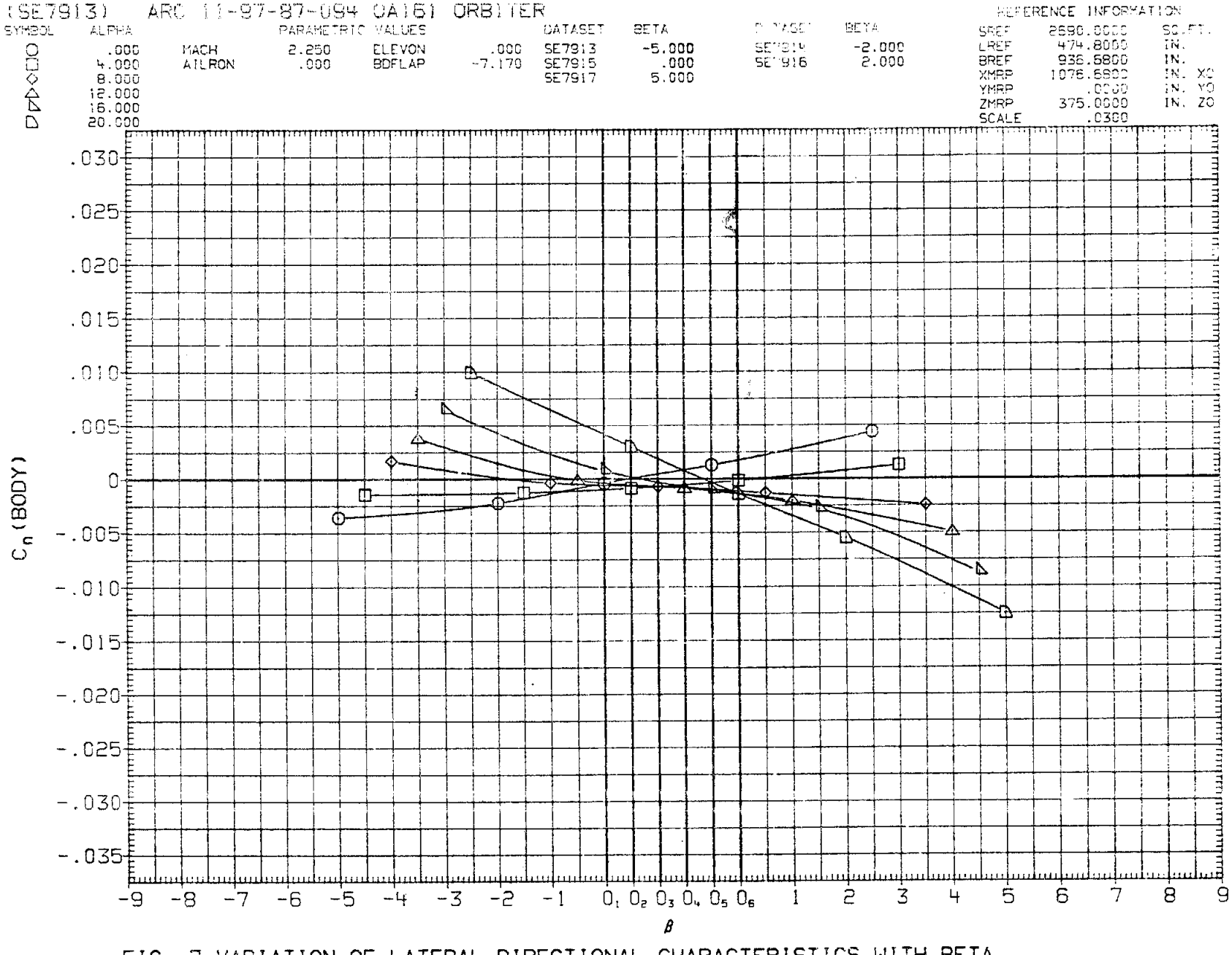


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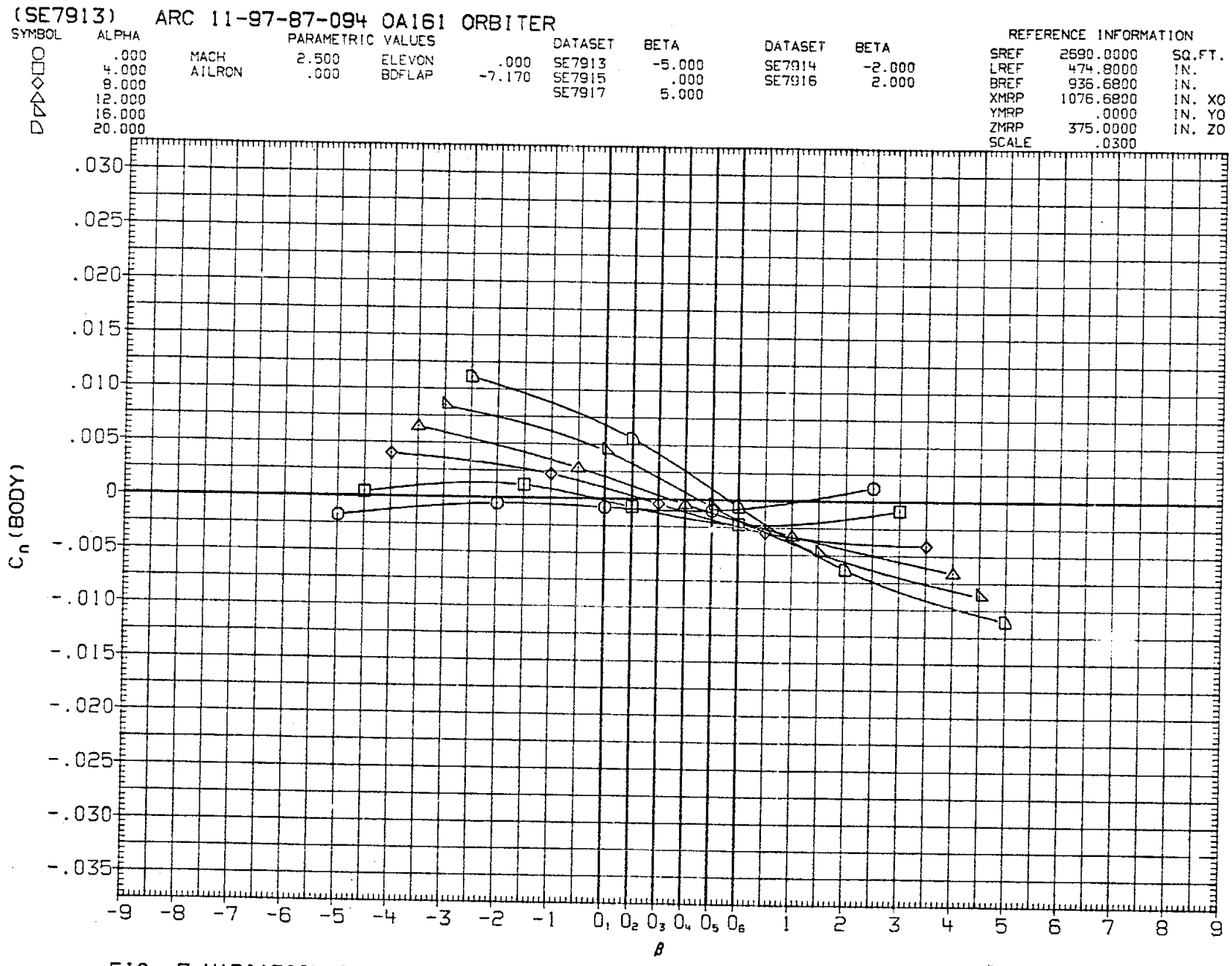


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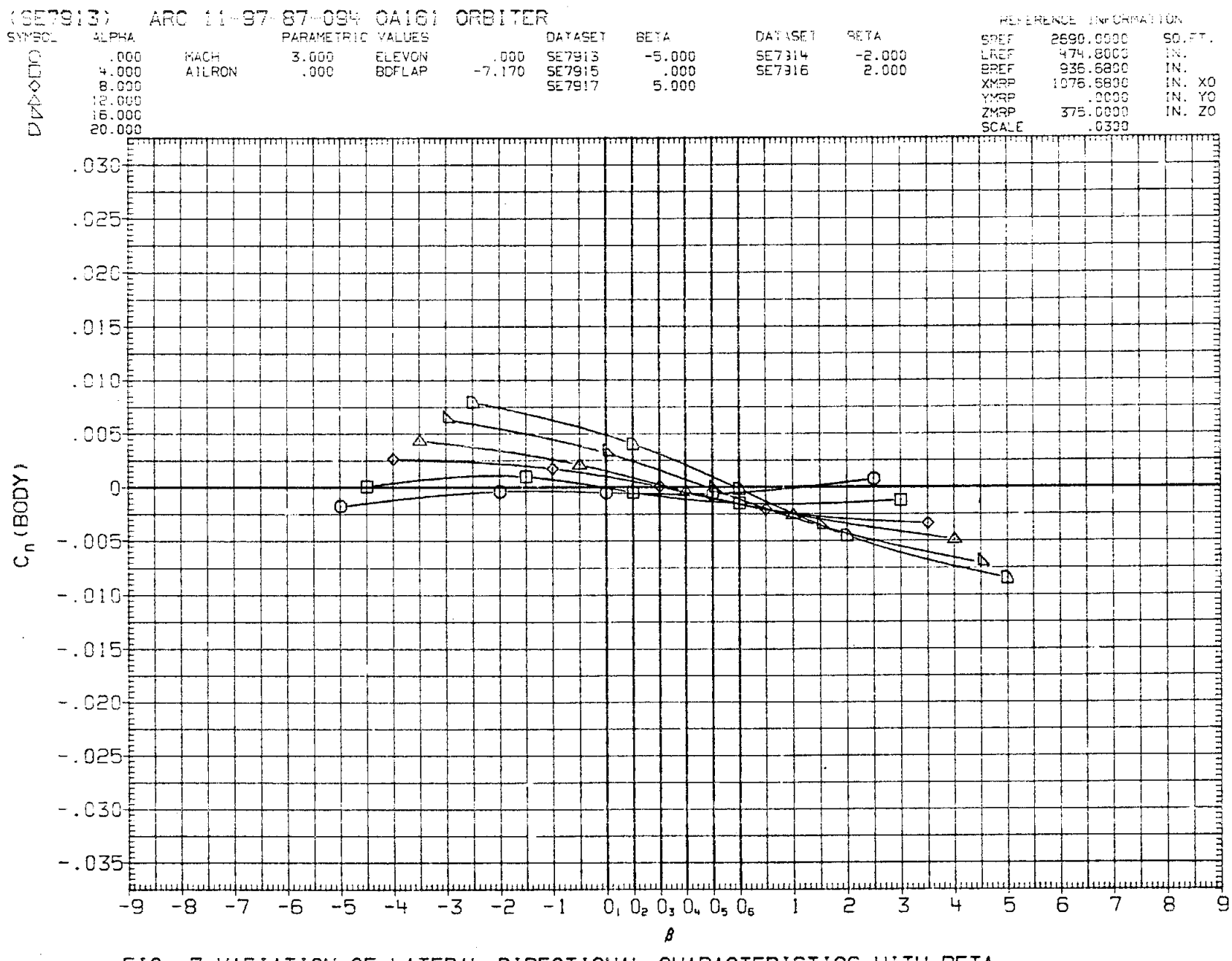


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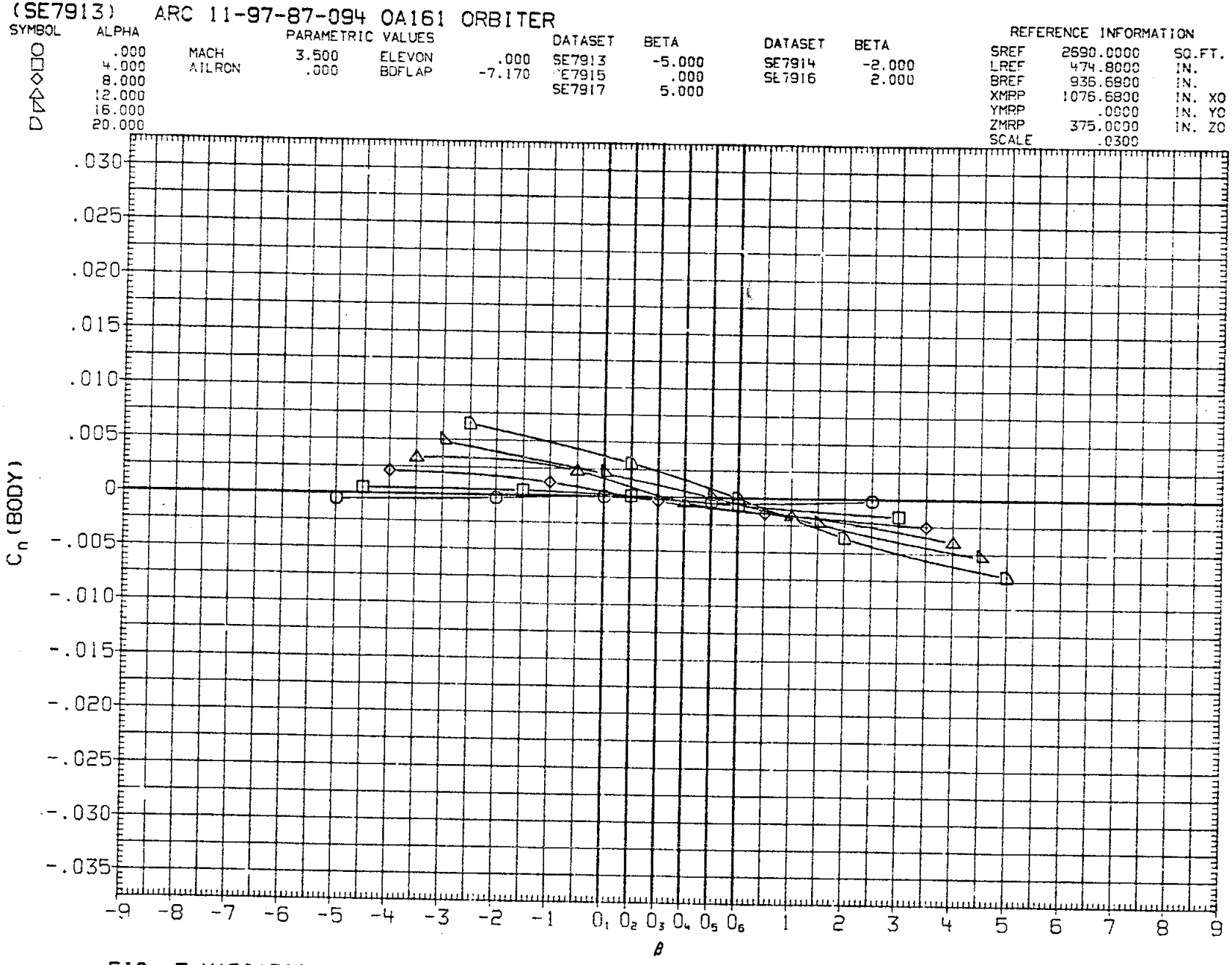


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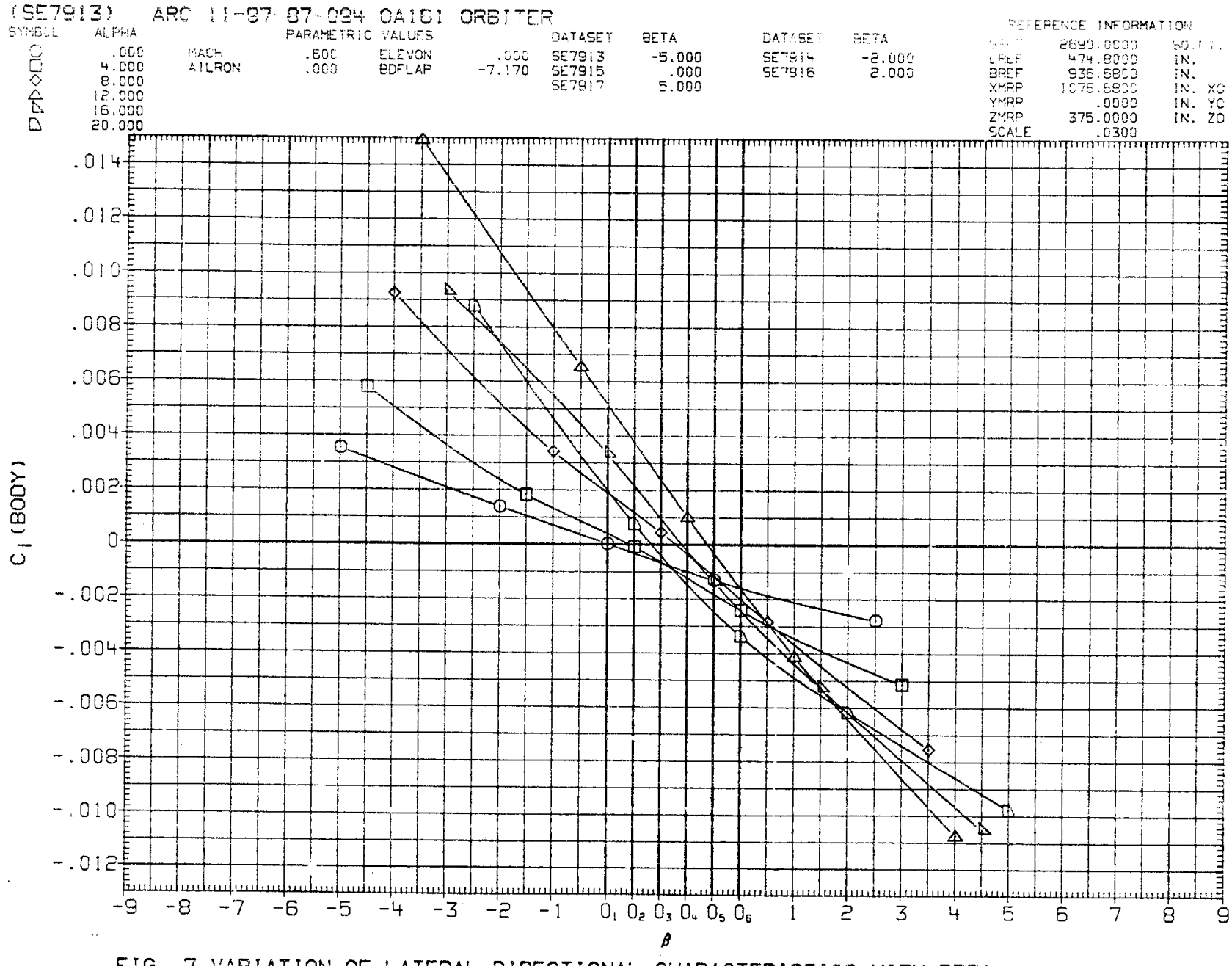


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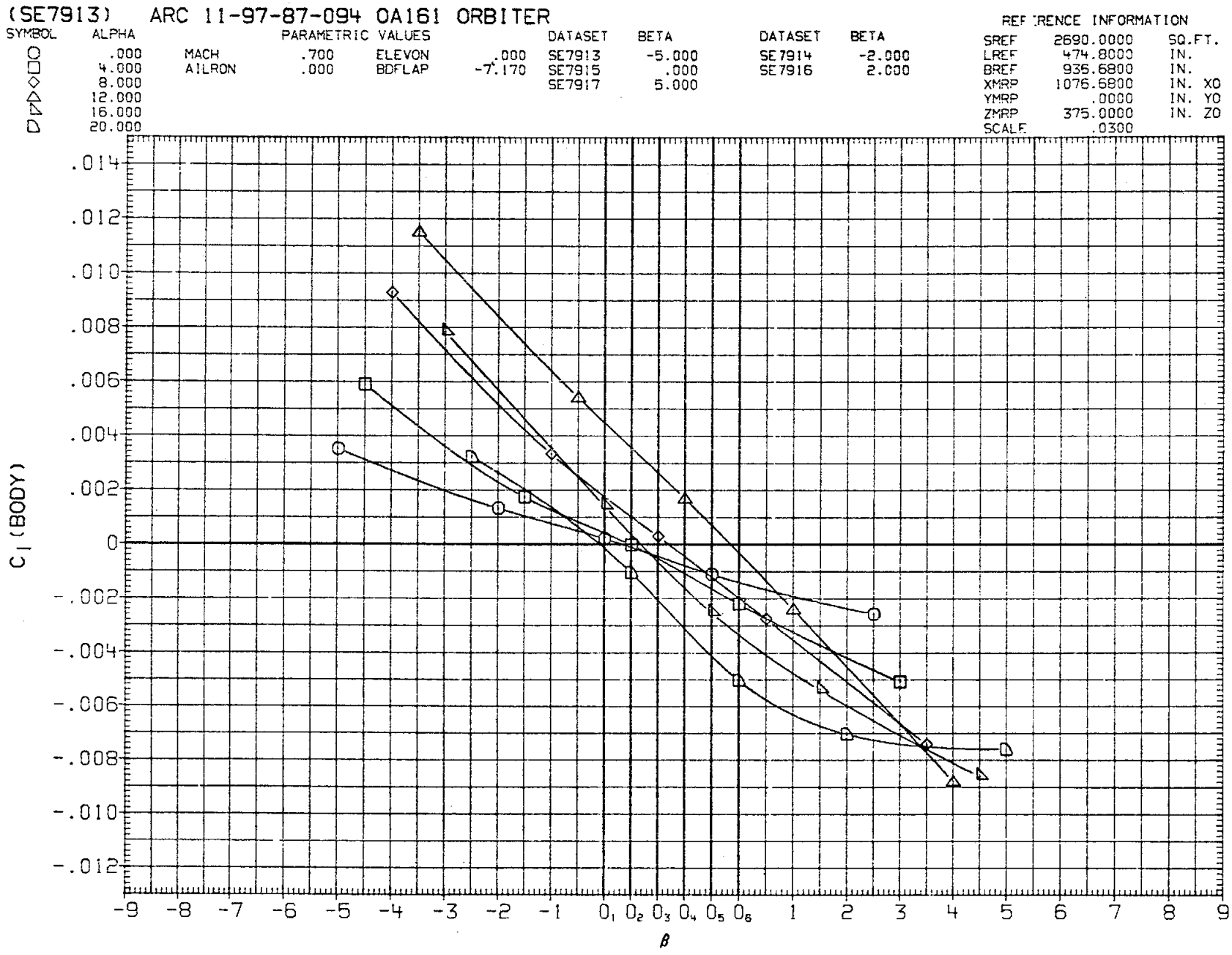


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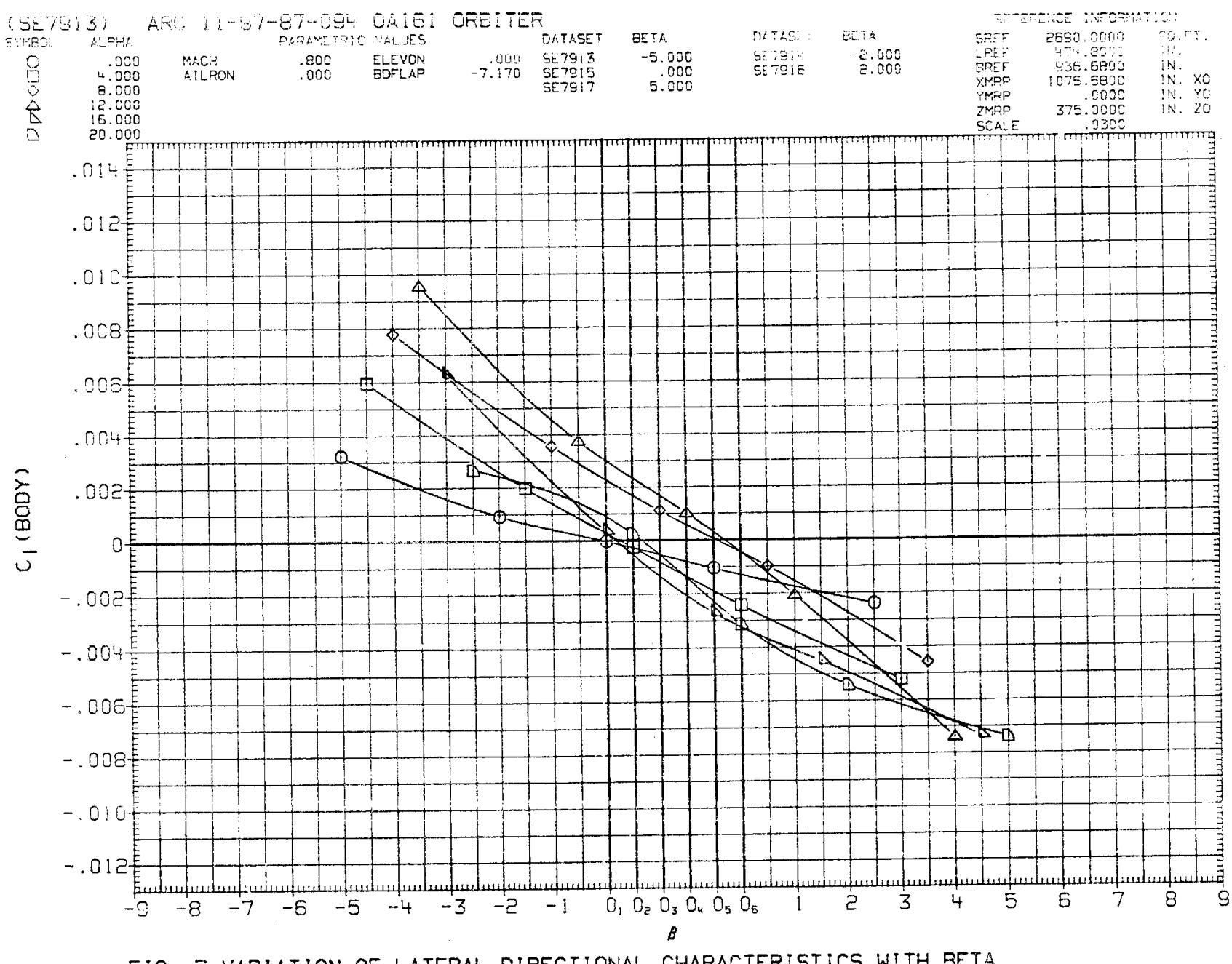


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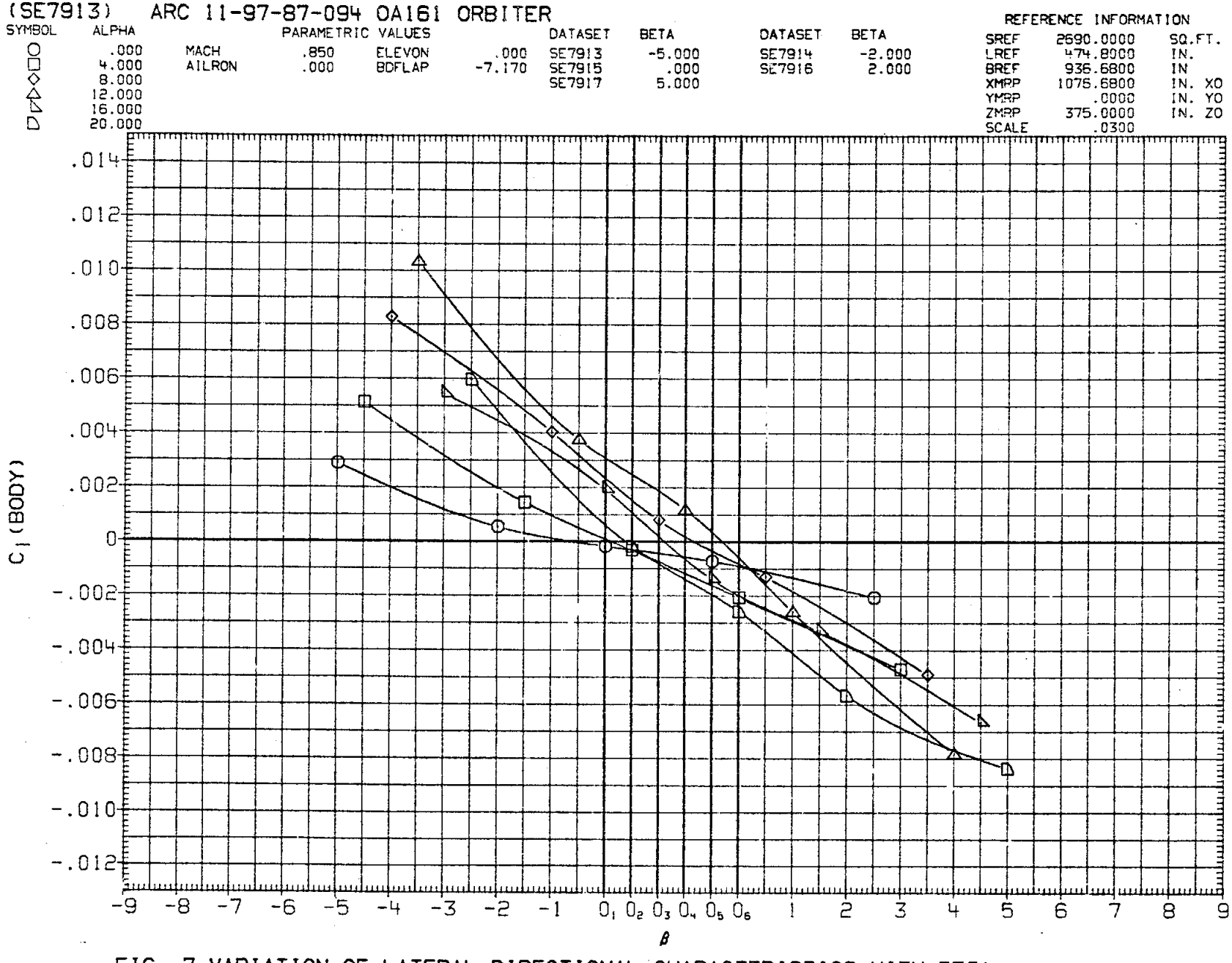


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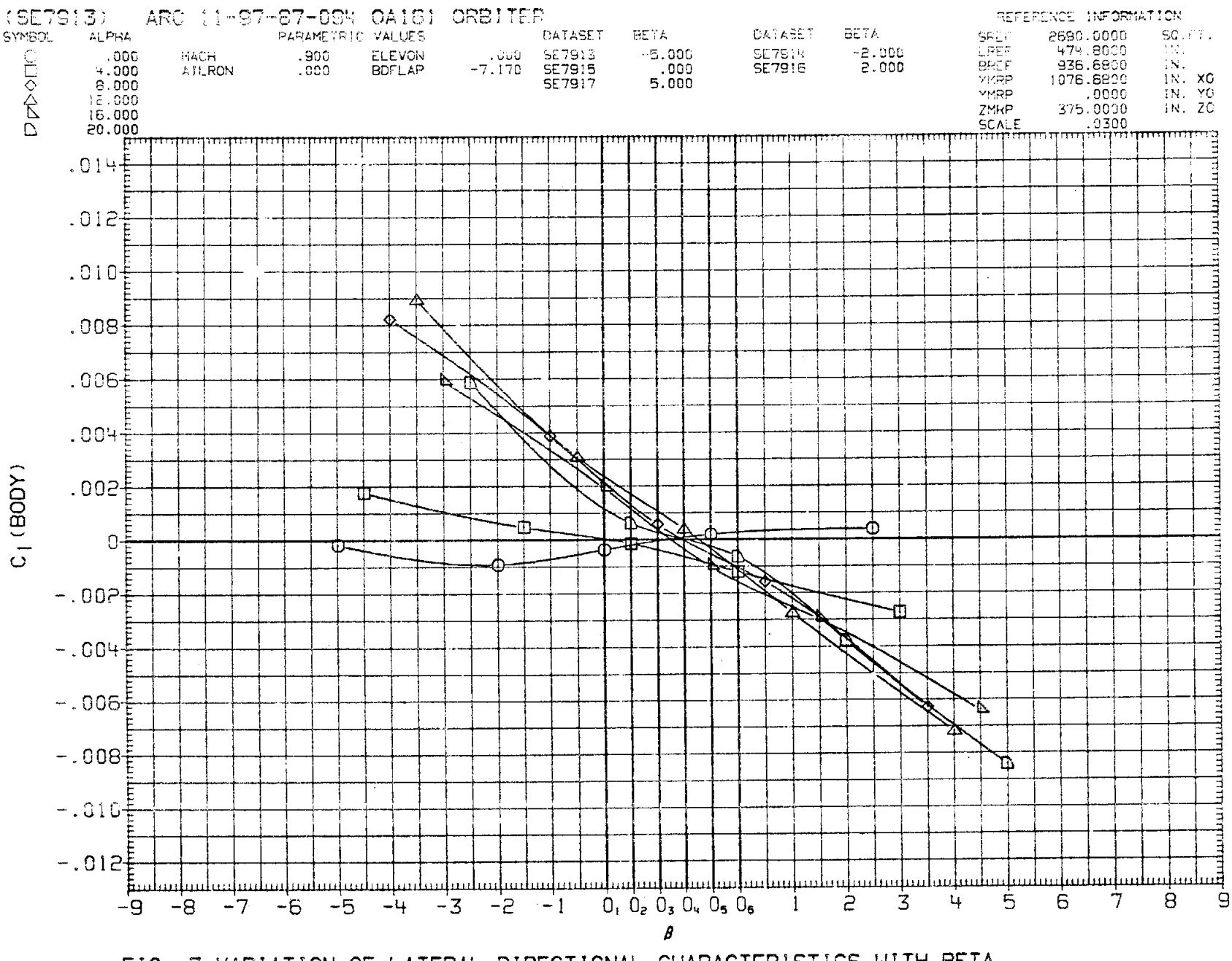


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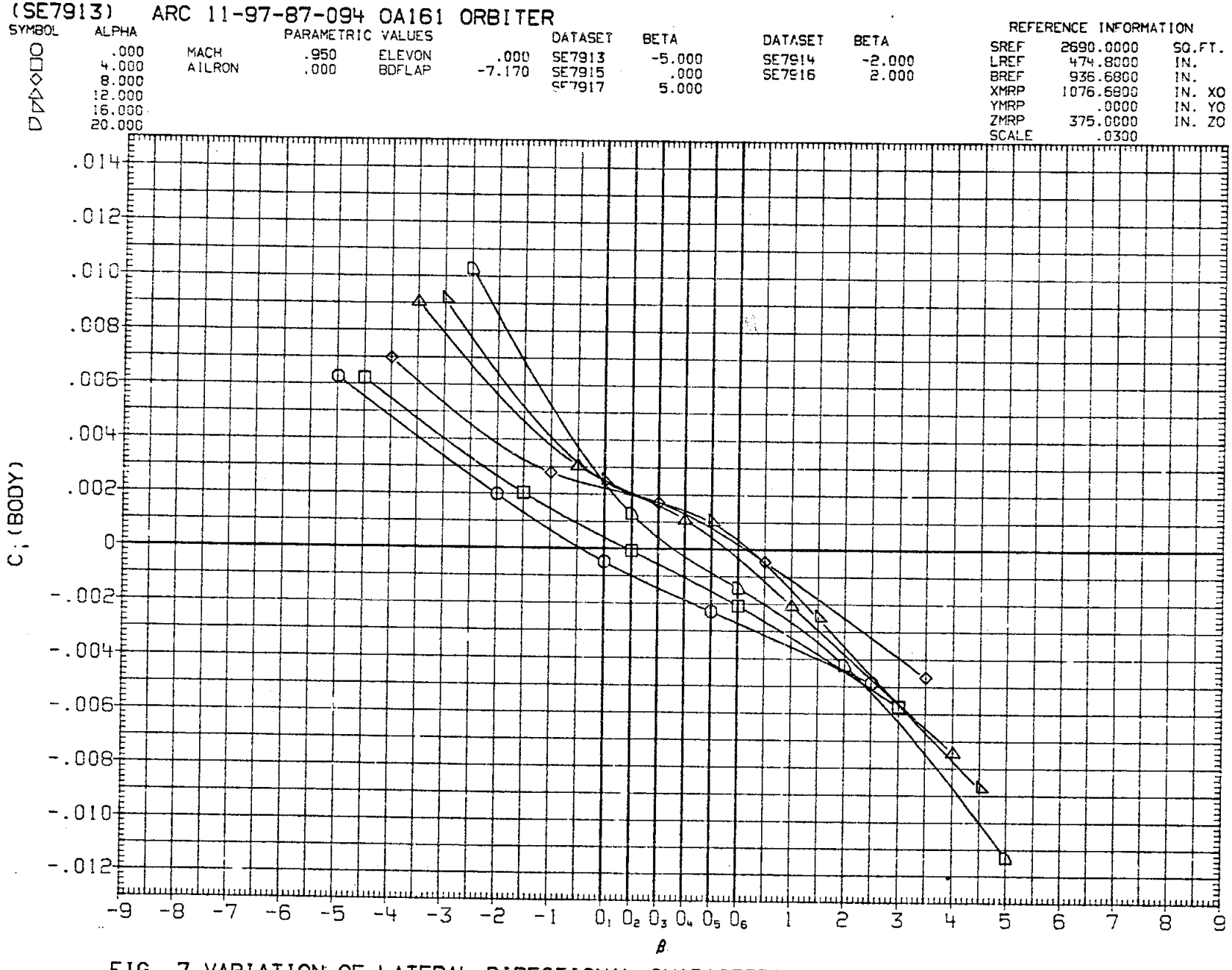


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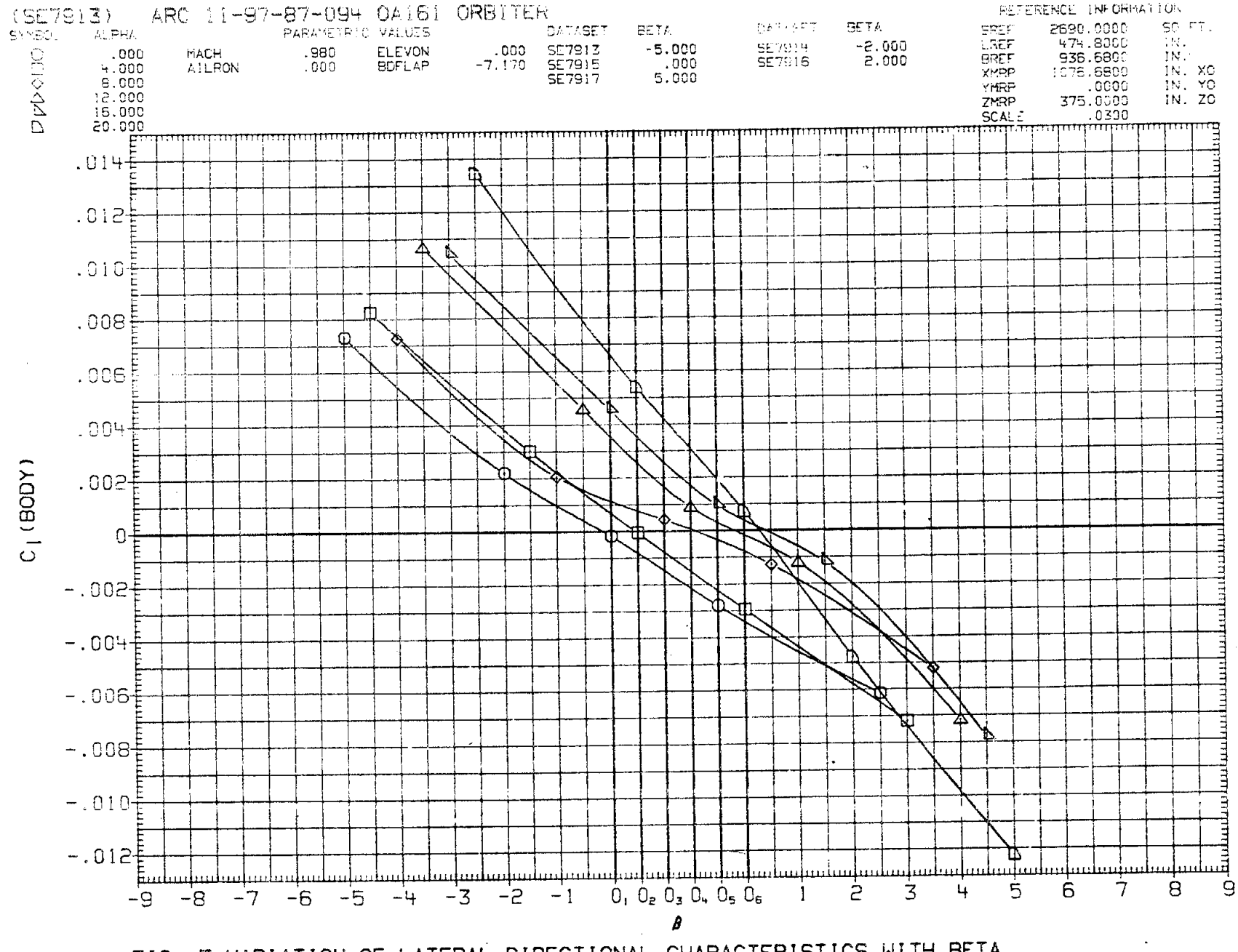


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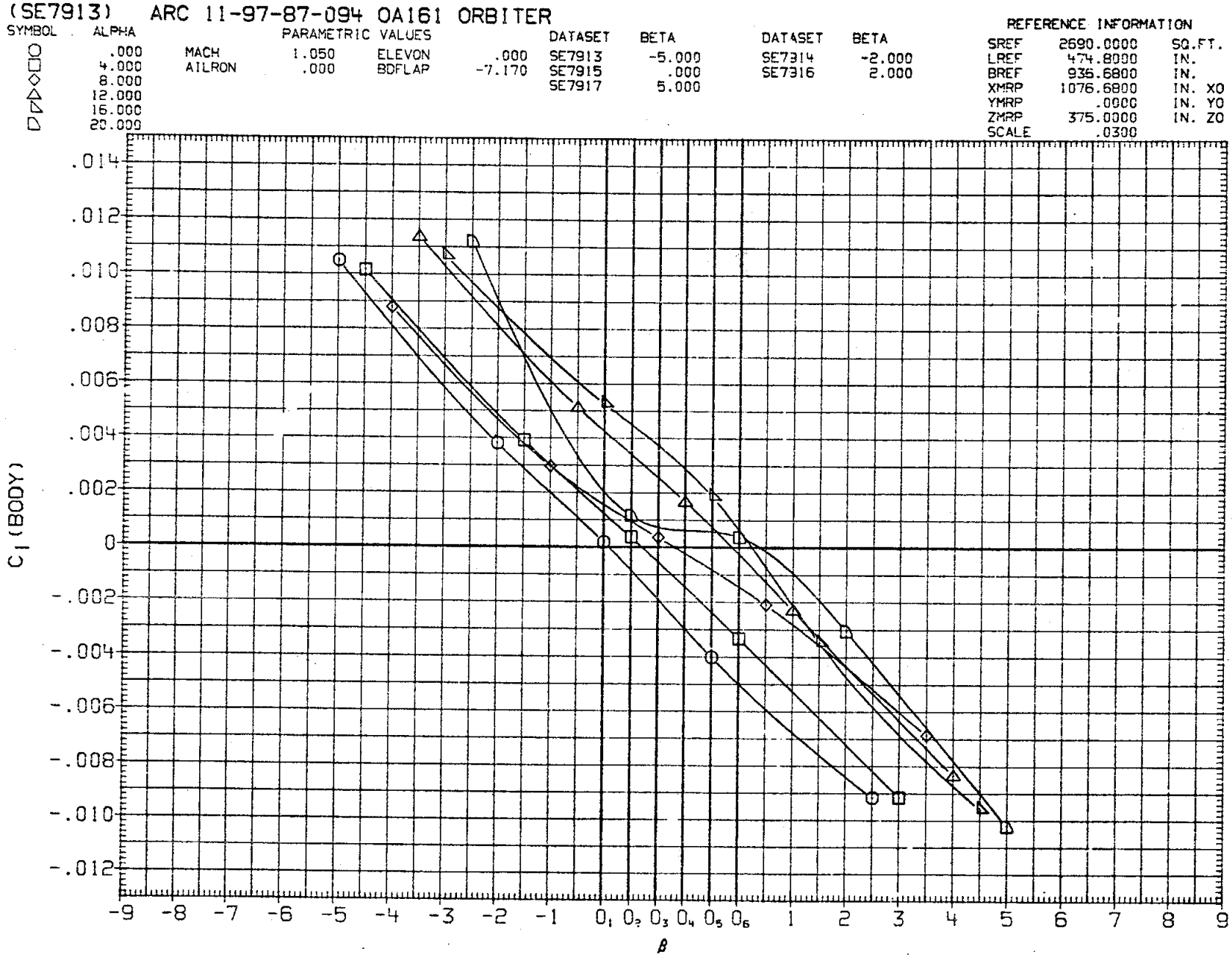


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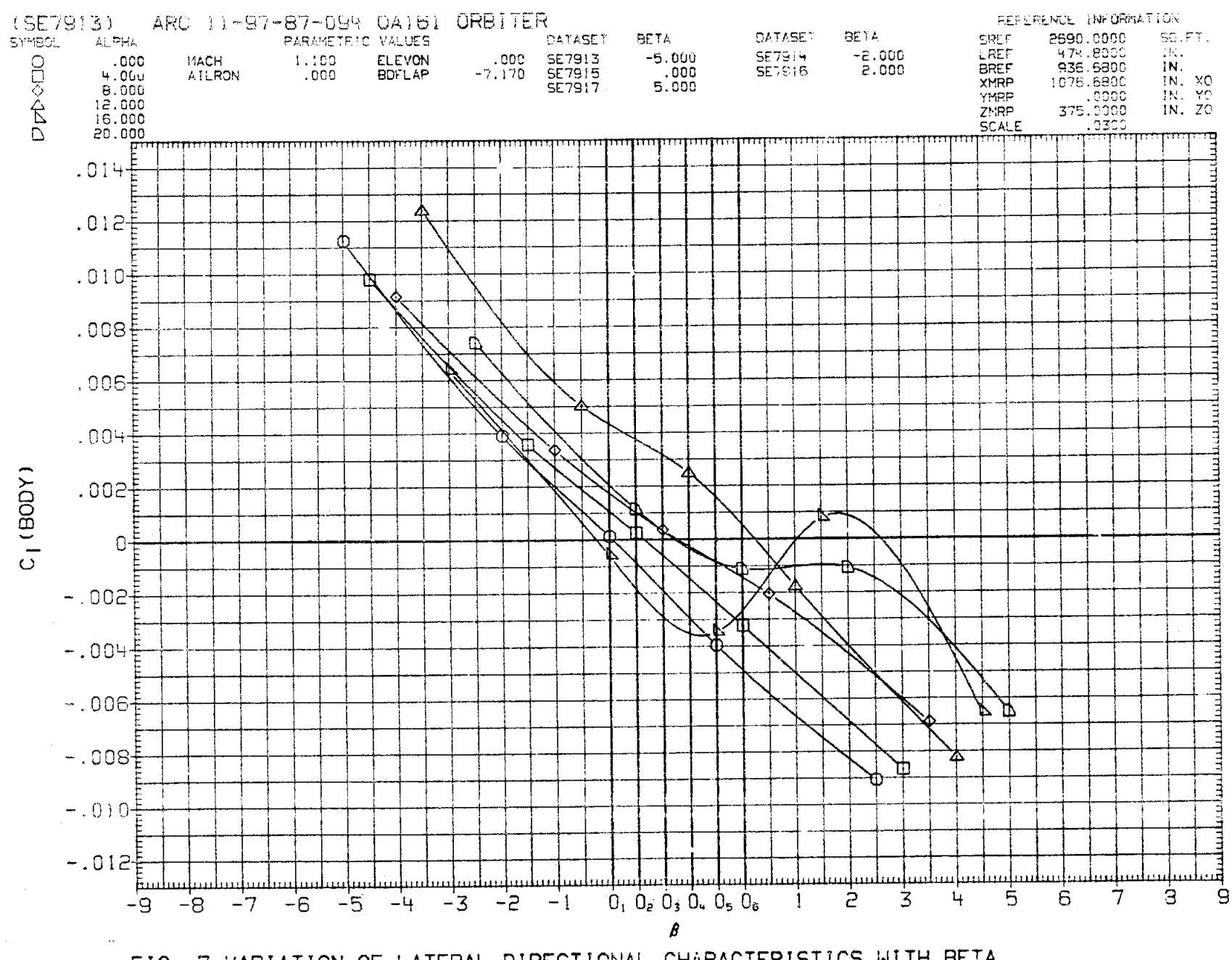


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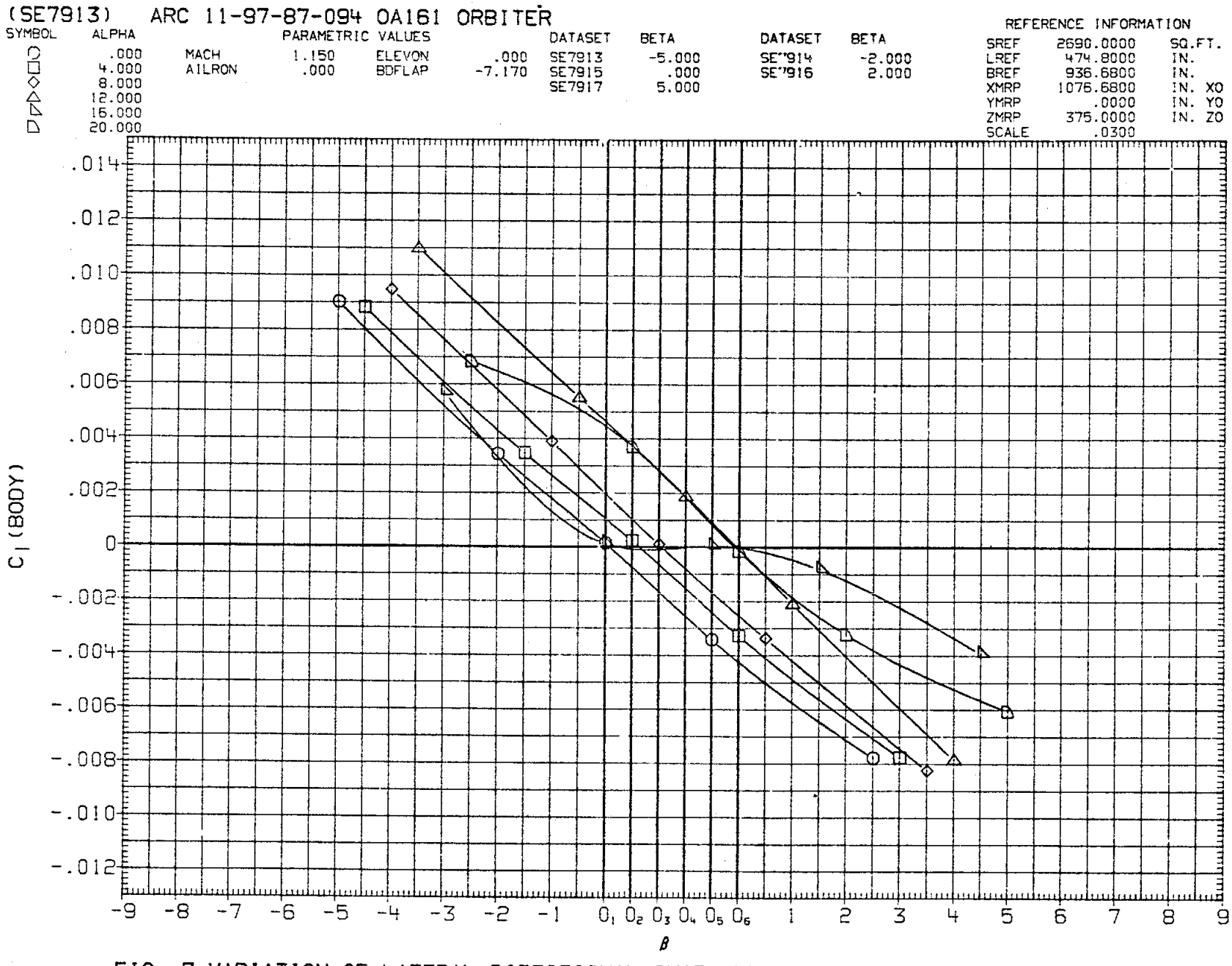


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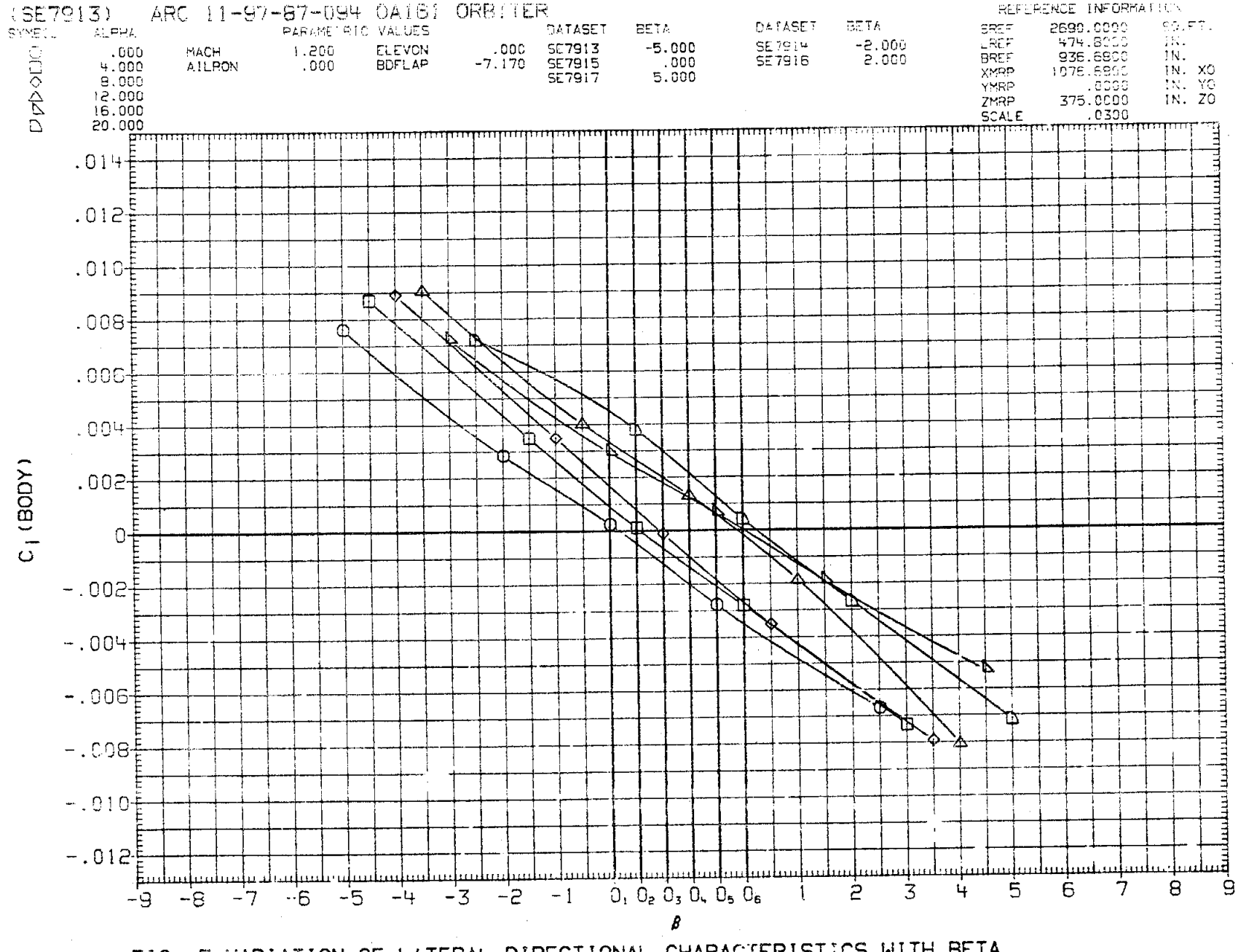


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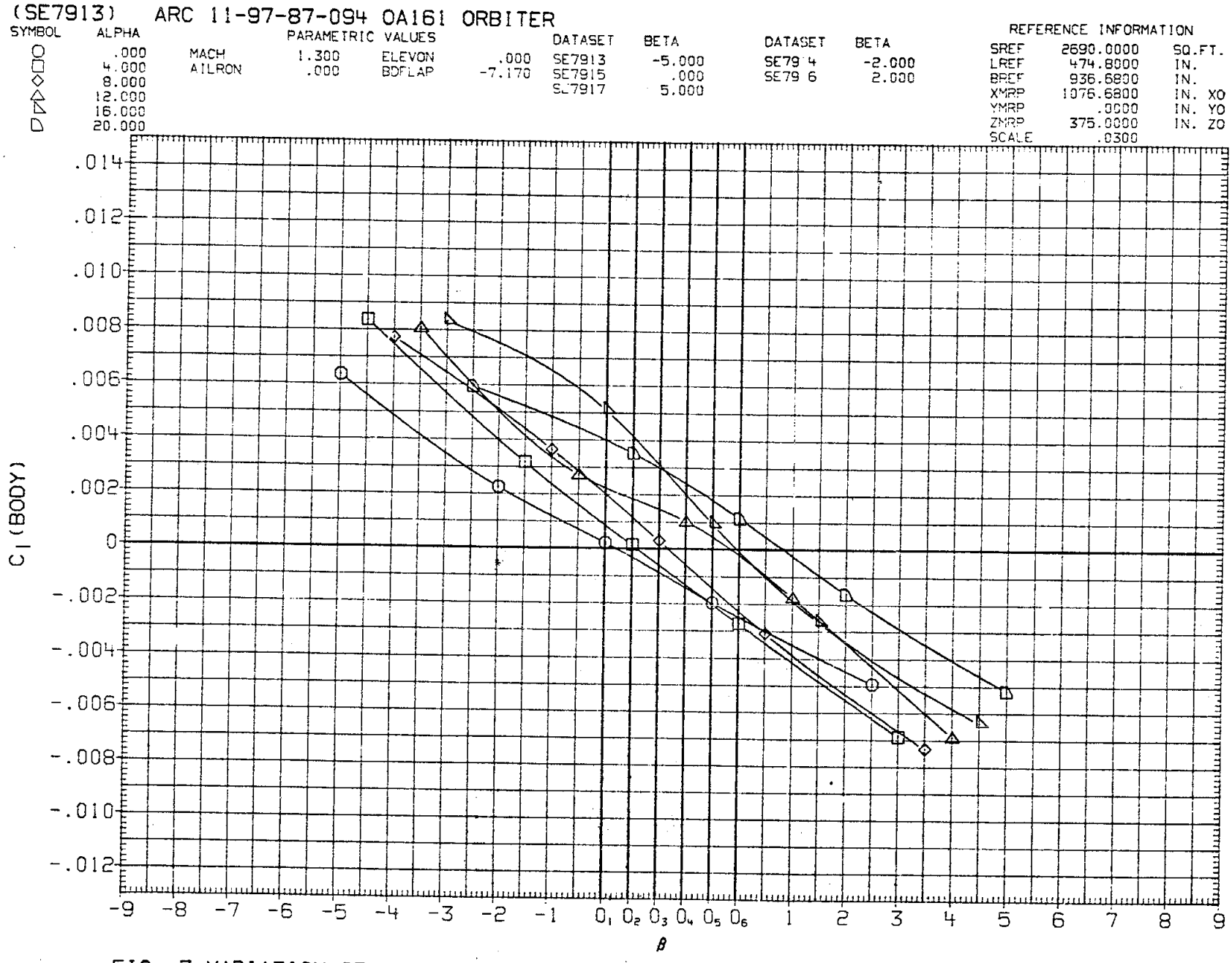


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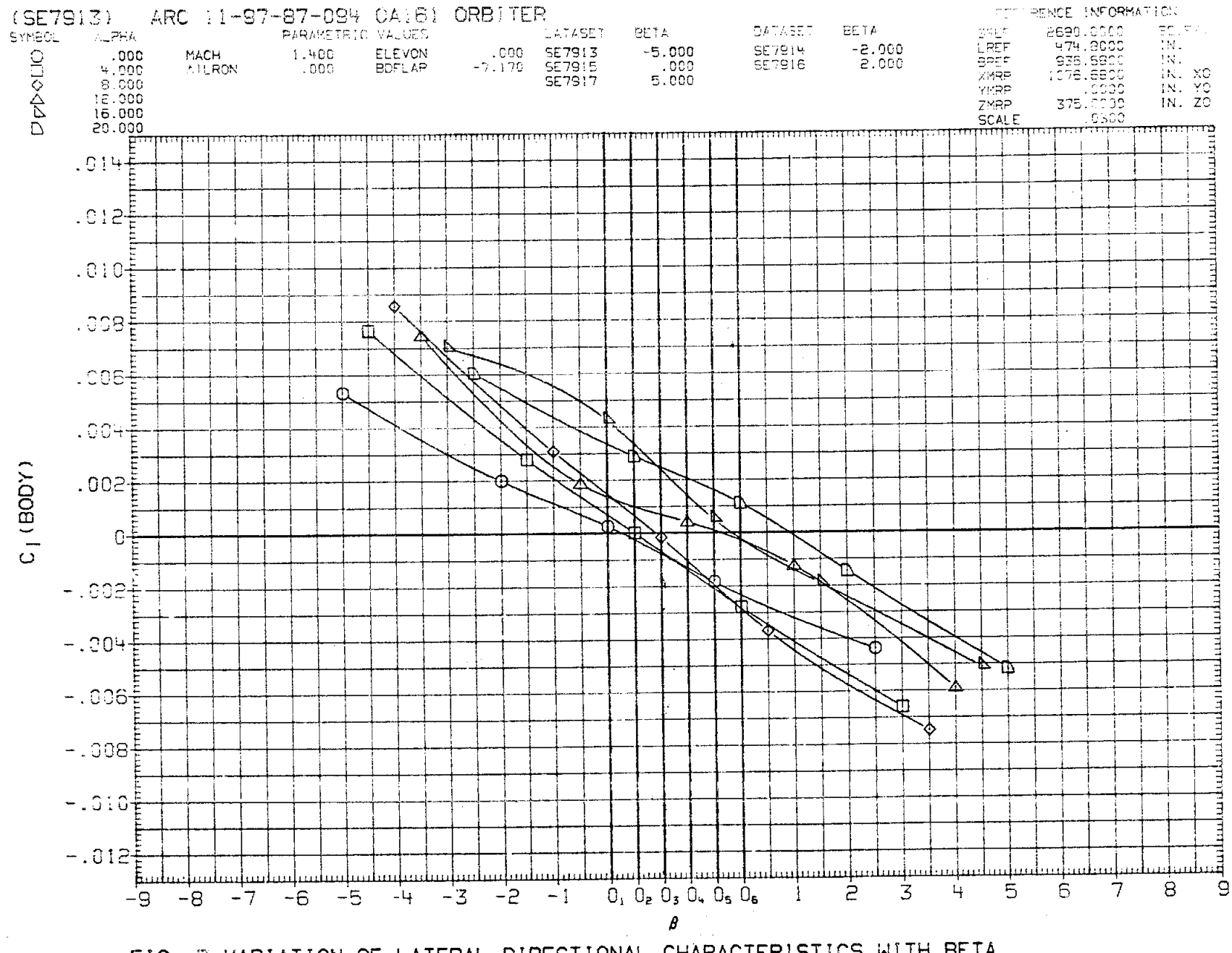


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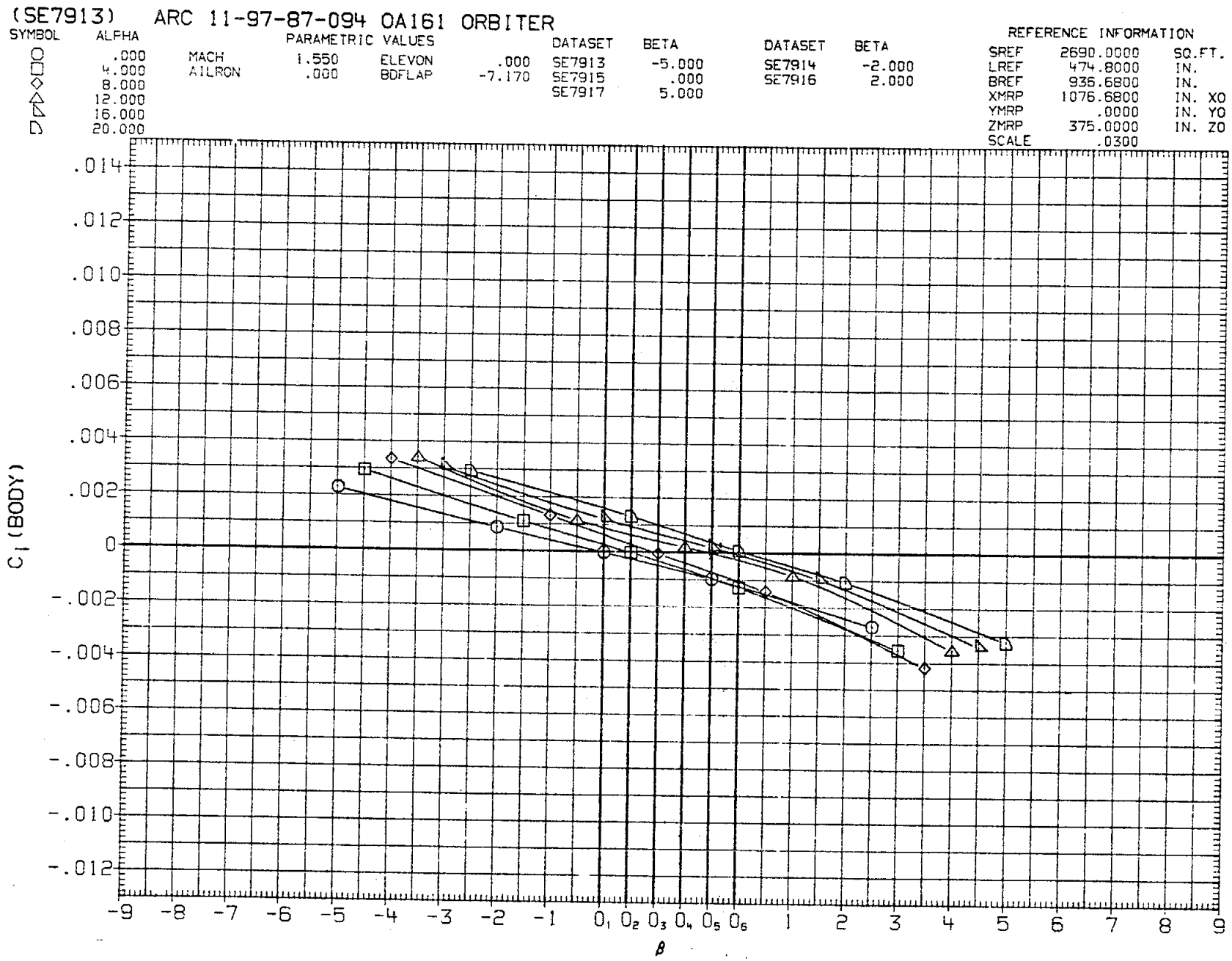


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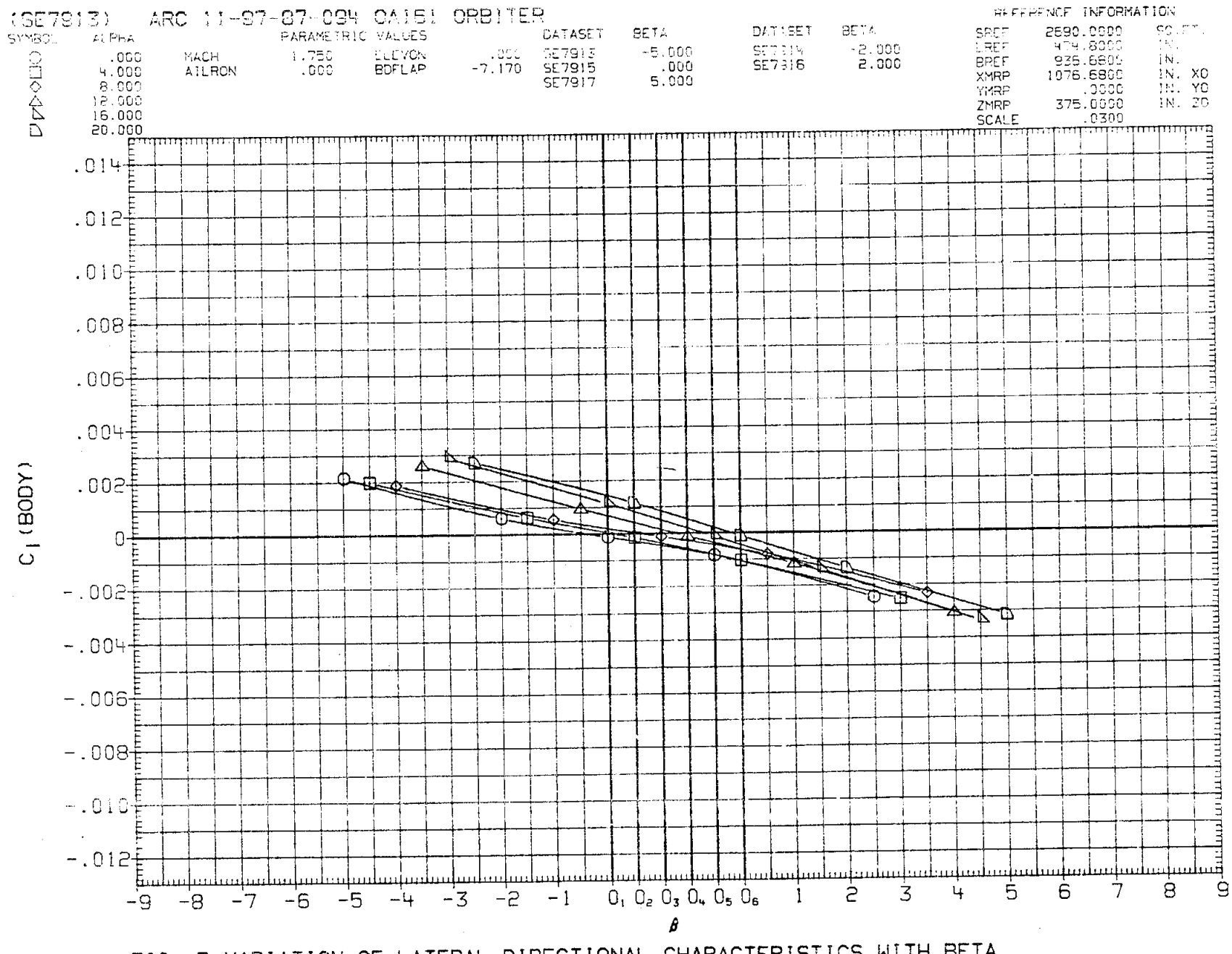


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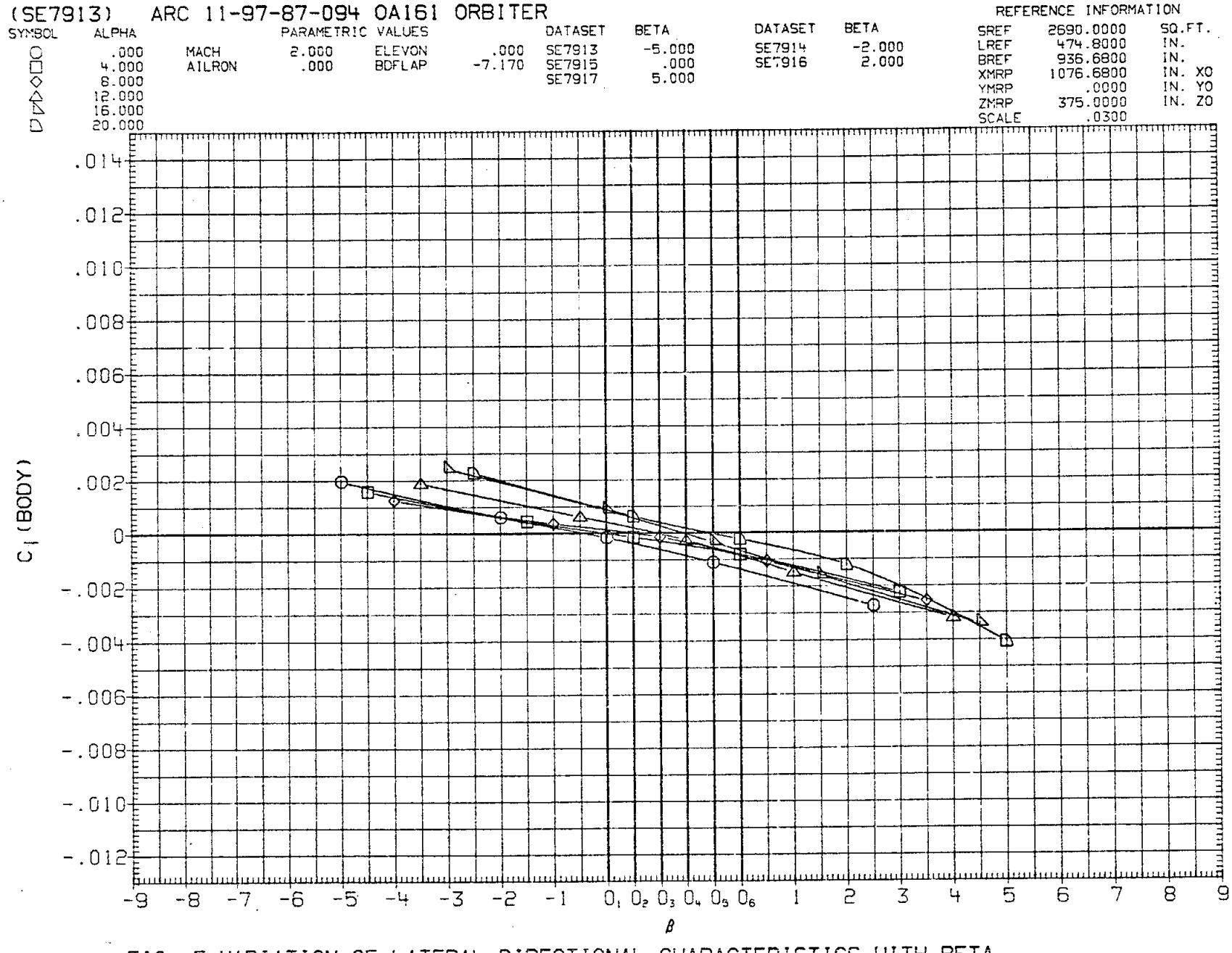


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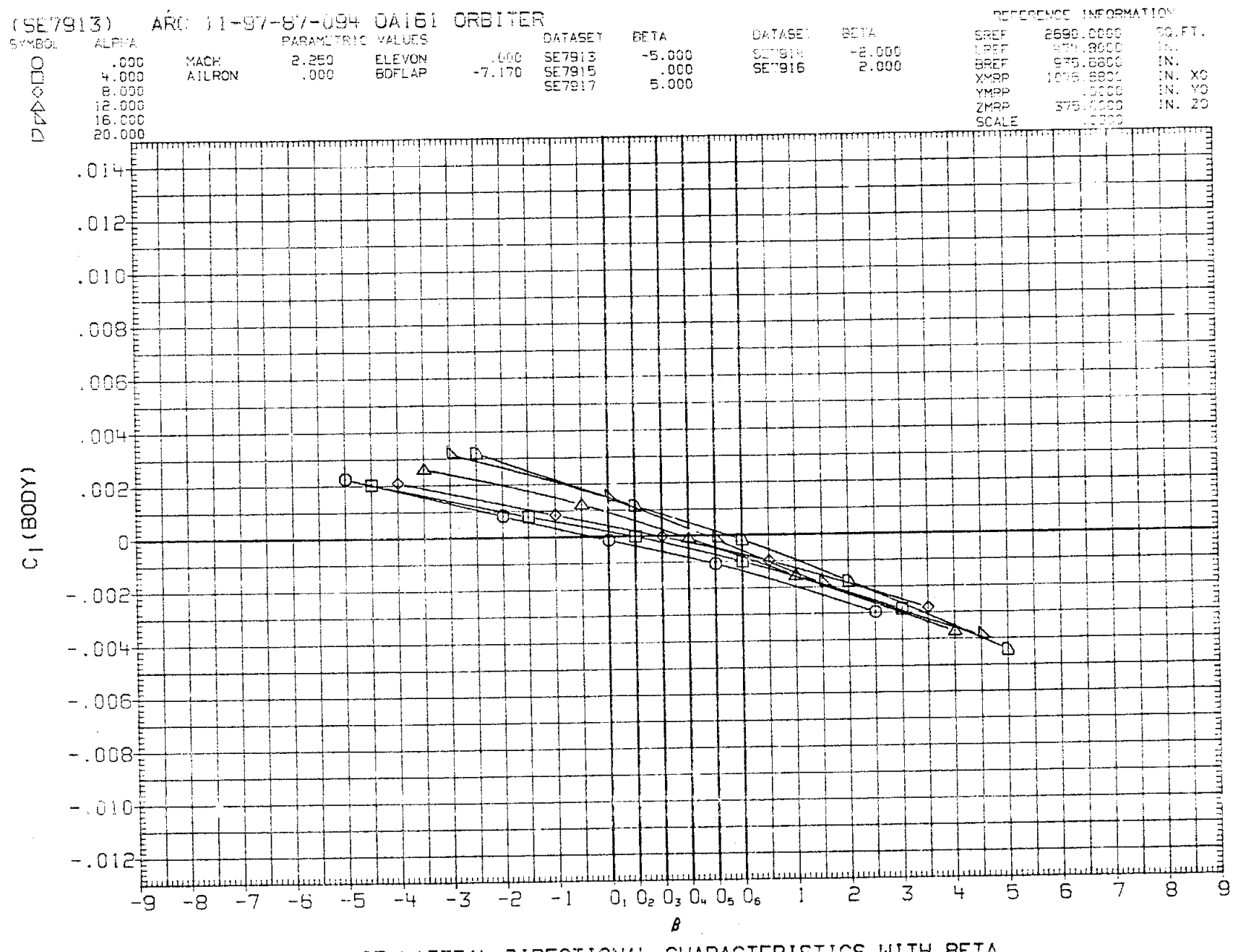


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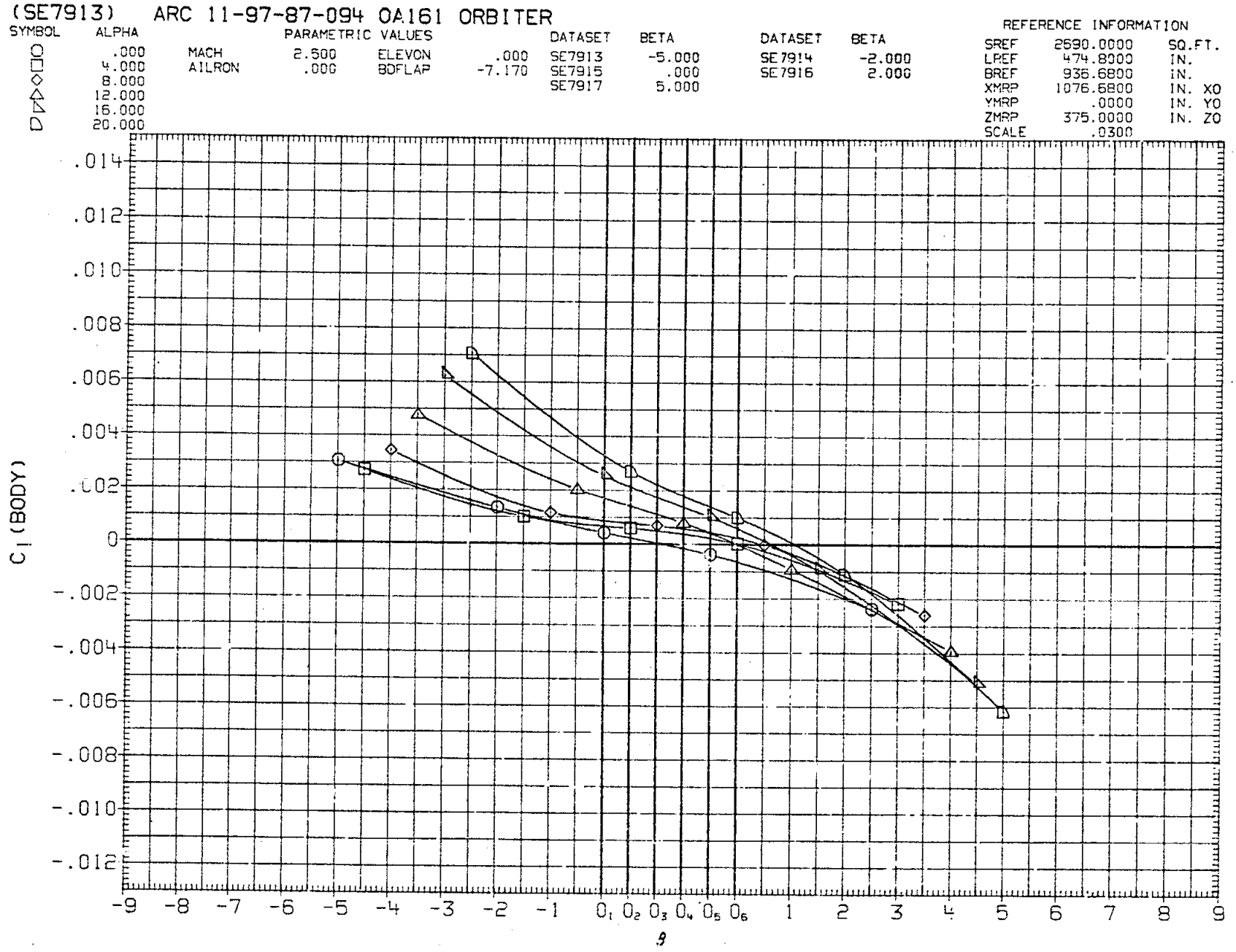


FIG. 7 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH BETA

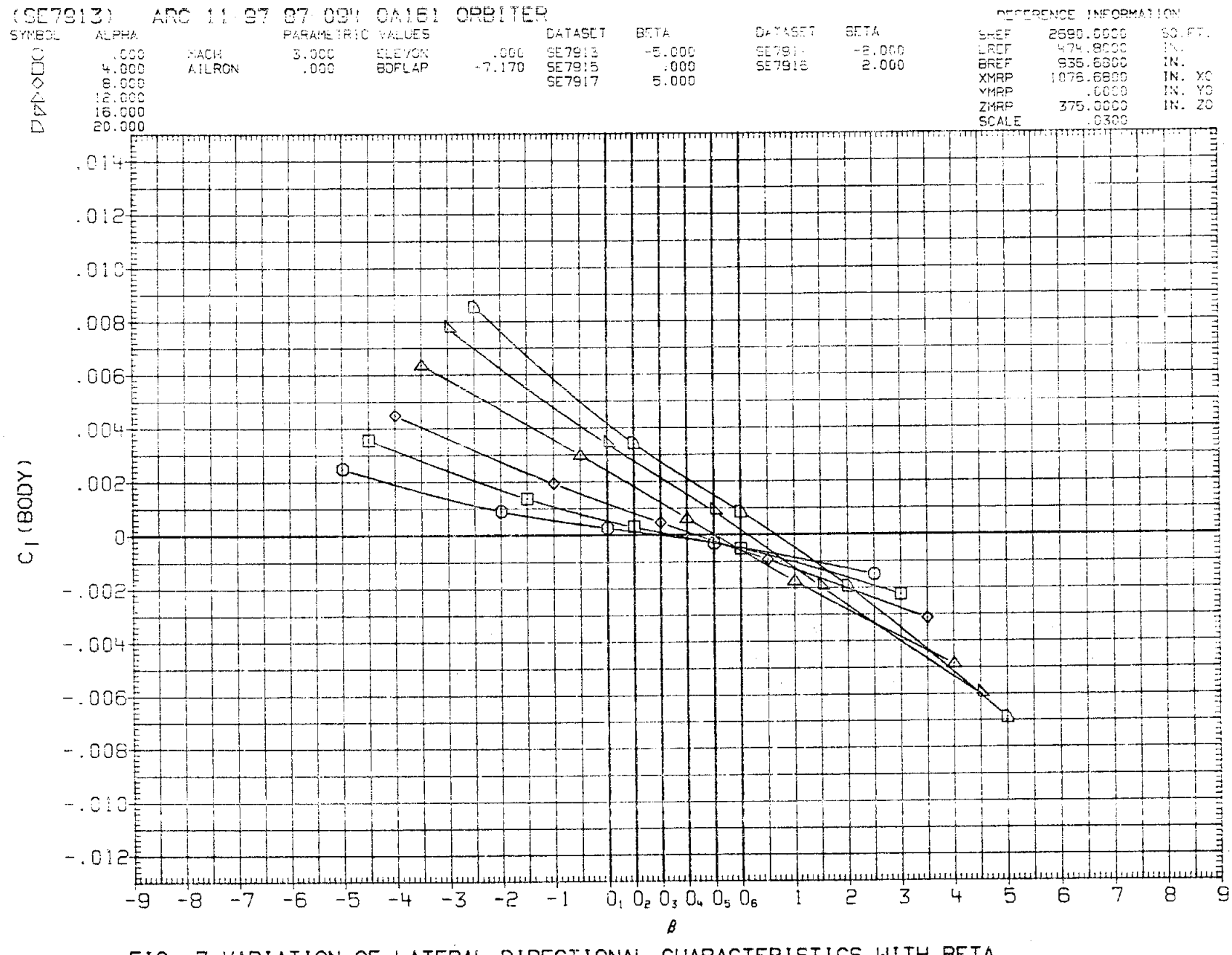


FIG. 7 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH BETA

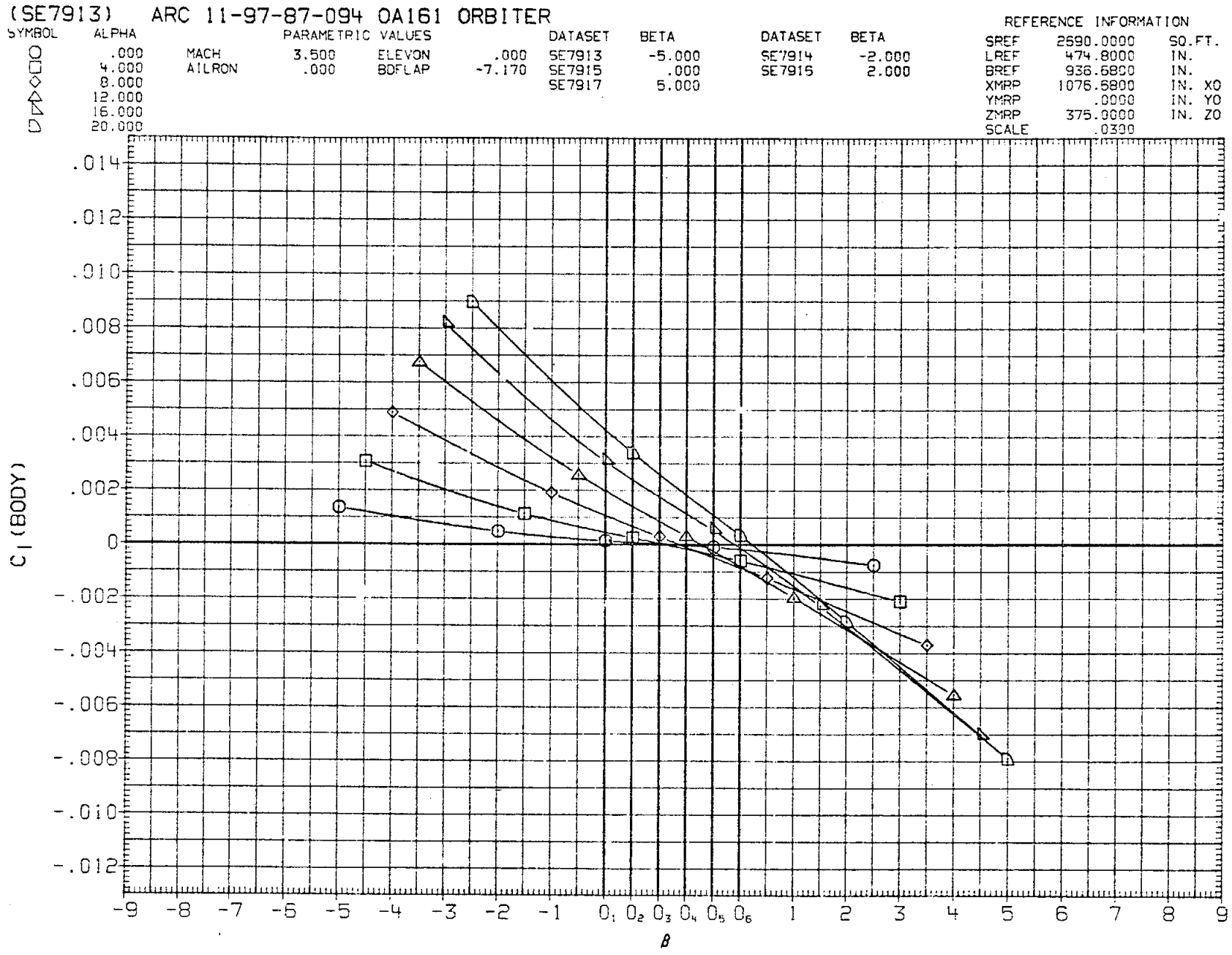


FIG. 7 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH BETA

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
RE70I3	○	ARC 11-97-87-094 OA161 ORBITER	-5.000	.000	.000	7.170
RE70I4	□	ARC 11-97-87-094 OA161 ORBITER	-2.000	.000	.000	-7.170
RE70I5	◇	ARC 11-97-87-094 OA161 ORBITER	.000	.000	.000	-7.170
RE70I6	△	ARC 11-97-87-094 OA161 ORBITER	2.000	.000	.000	-7.170
RE70I7	▽	ARC 11-97-87-094 OA161 ORBITER	5.000	.000	.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.6000	IN.
BREF	938.6800	IN.
XMRP	1076.8600	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

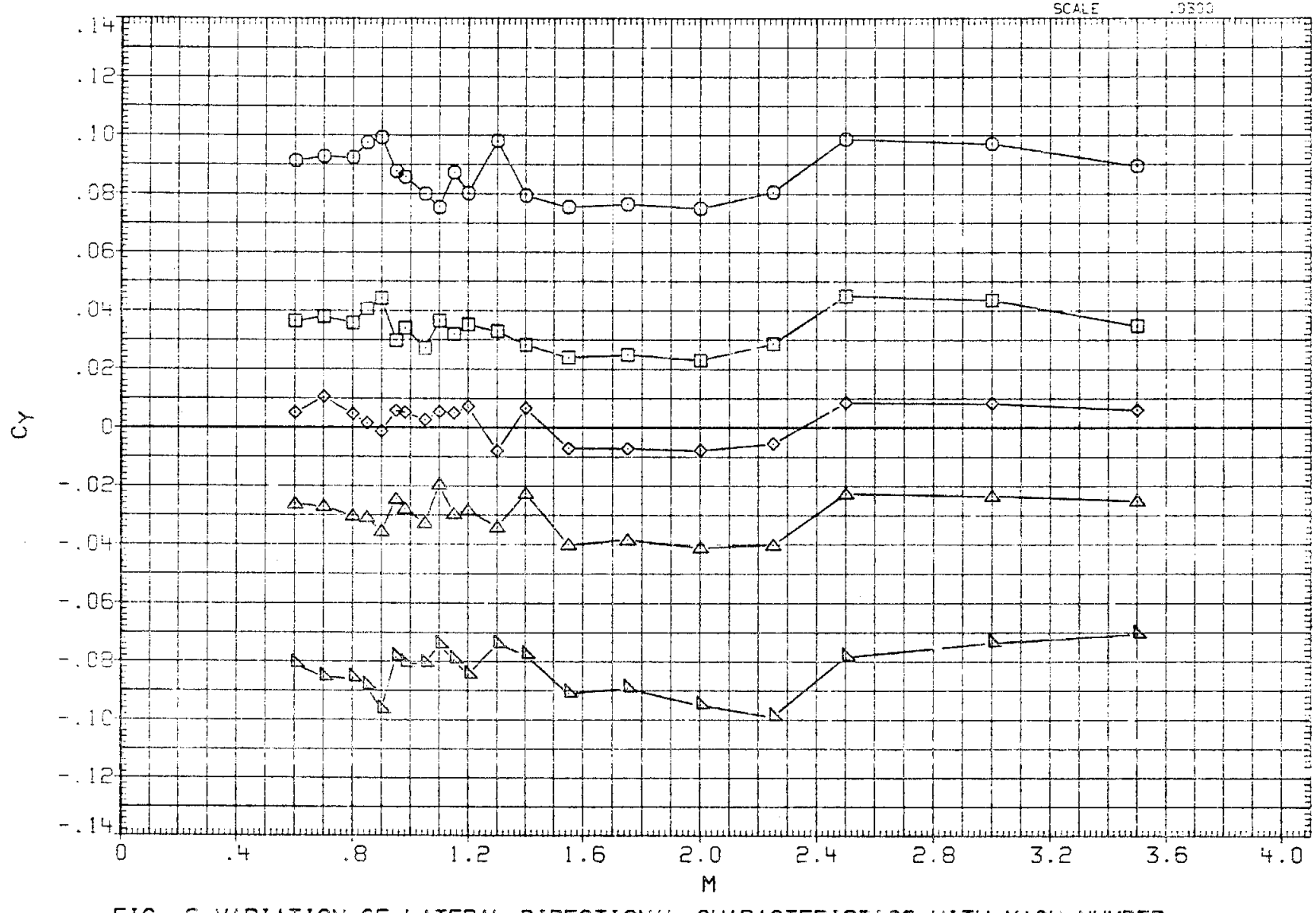


FIG. 8 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH MACH NUMBER

(A)ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION
RE7913	○	ARC 11-97-87-094 OA161 ORBITER
RE7914	□	ARC 11-97-87-094 OA161 ORBITER
RE7915	◇	ARC 11-97-87-094 OA161 ORBITER
RE7916	△	ARC 11-97-87-094 OA161 ORBITER
RE7917	◁	ARC 11-97-87-094 OA161 ORBITER

BETA	ELEVON	AILRON	BDFLAP
-5.000	.000	.000	-7.170
-2.000	.000	.000	-7.170
.000	.000	.000	-7.170
2.000	.000	.000	-7.170
5.000	.000	.000	-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

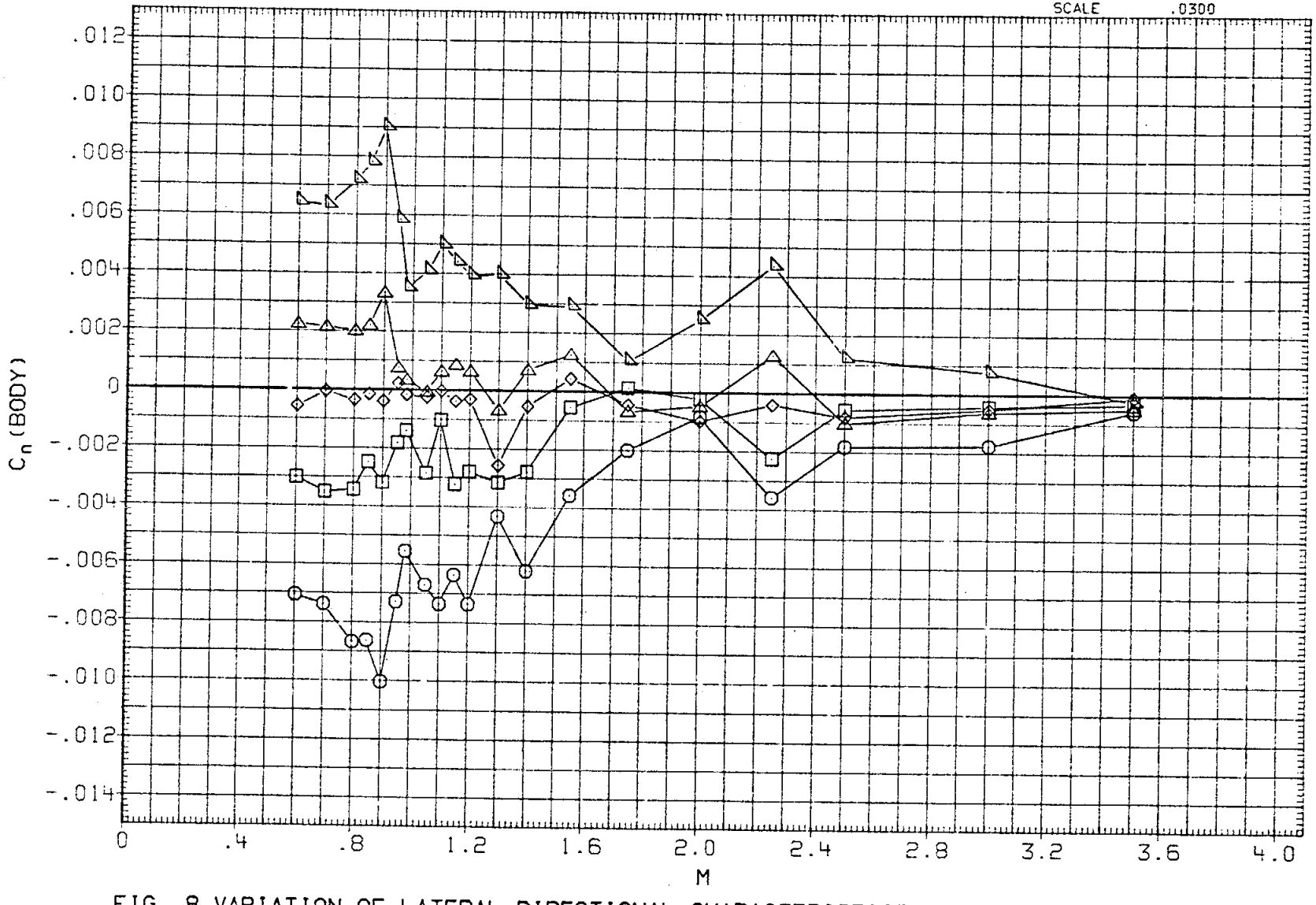


FIG. 8 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH MACH NUMBER

(A) ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	RUDDA
RE7814	○	ARC 11-97-87-094 OA161 ORBITER	-5.000	.000	.000	-7.170
RE7815	□	ARC 11-97-87-094 OA161 ORBITER	-2.000	.000	.000	-7.170
RE7816	◇	ARC 11-97-87-094 OA161 ORBITER	.000	.000	.000	-7.170
RE7817	△	ARC 11-97-87-094 OA161 ORBITER	2.000	.000	.000	-7.170
RE7818	▽	ARC 11-97-87-094 OA161 ORBITER	5.000	.000	.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

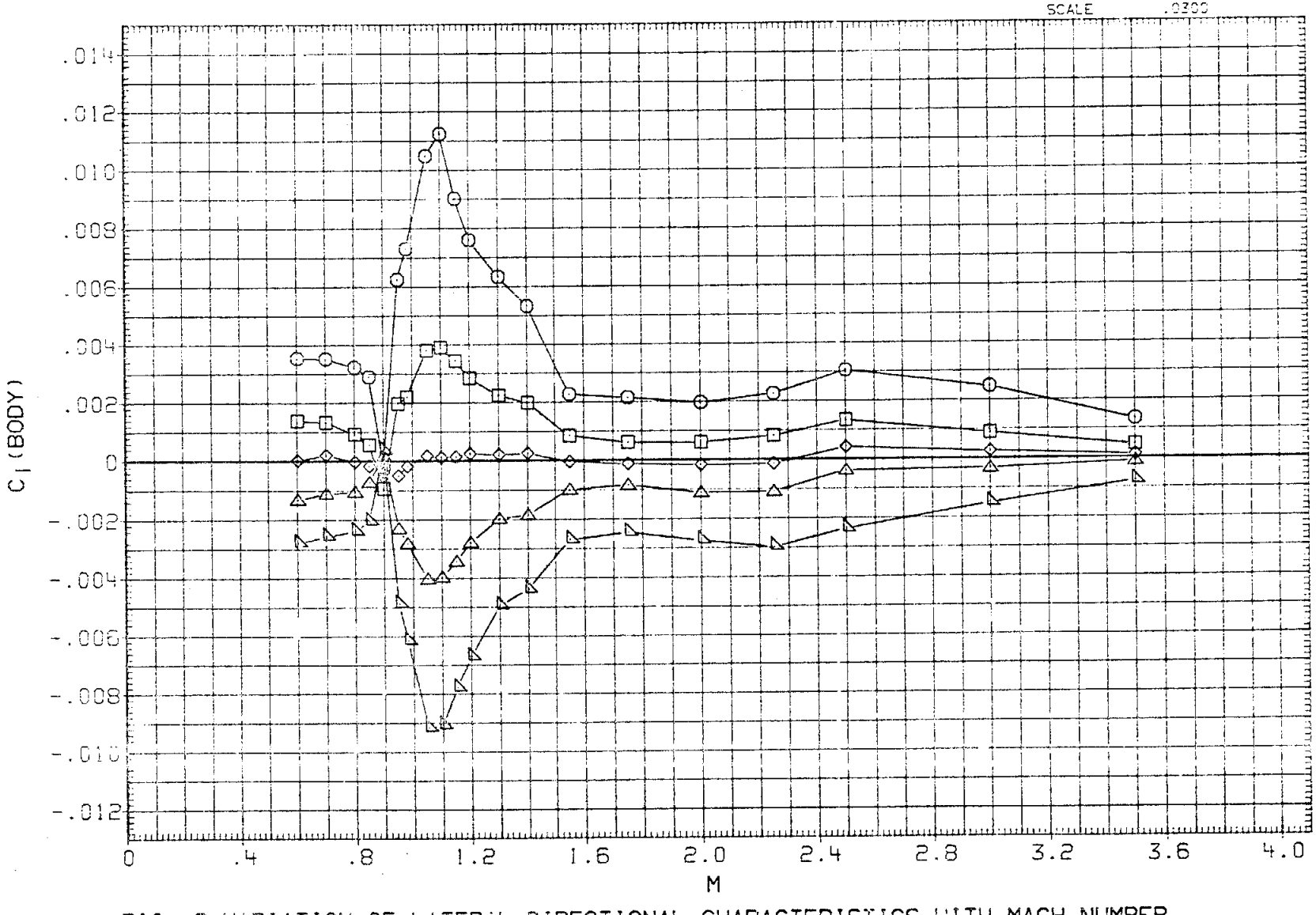


FIG. 8 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH MACH NUMBER

(A) ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION
RE7913	○	ARC 11-97-87-094 OA161 ORBITER
RE7914	□	ARC 11-97-87-094 OA161 ORBITER
RE7915	◇	ARC 11-97-87-094 OA161 ORBITER
RE7916	△	ARC 11-97-87-094 OA161 ORBITER
RE7917	▽	ARC 11-97-87-094 OA161 ORBITER

BETA	ELEVON	AILRON	BDFLAP
-5.000	.000	.000	-7.170
-2.000	.000	.000	-7.170
.000	.000	.000	-7.170
2.000	.000	.000	-7.170
5.000	.000	.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.0000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

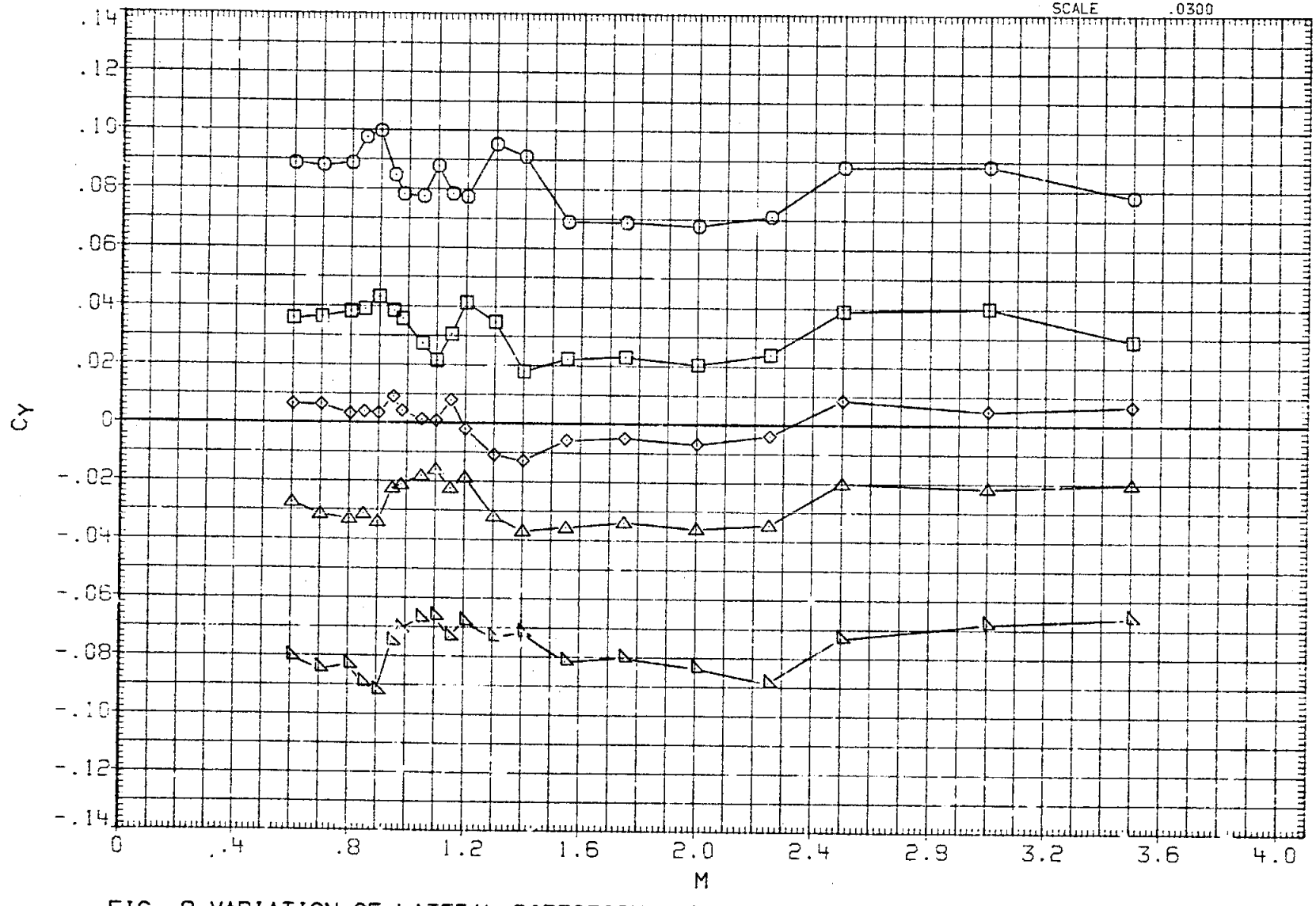


FIG. 8 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH MACH NUMBER

(B)ALPHA = 4.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
RE7913	○	ARC 11-97-87-094 OA161 ORBITER	-5.000	.000	.000	-7.170
RE7914	□	ARC 11-97-87-094 OA161 ORBITER	-2.000	.000	.000	-7.170
RE7915	◇	ARC 11-97-87-094 OA161 ORBITER	.000	.000	.000	-7.170
RE7916	△	ARC 11-97-87-094 OA161 ORBITER	2.000	.000	.000	-7.170
RE7917	▽	ARC 11-97-87-094 OA161 ORBITER	5.000	.000	.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	935.6800	IN.
XMRP	1576.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

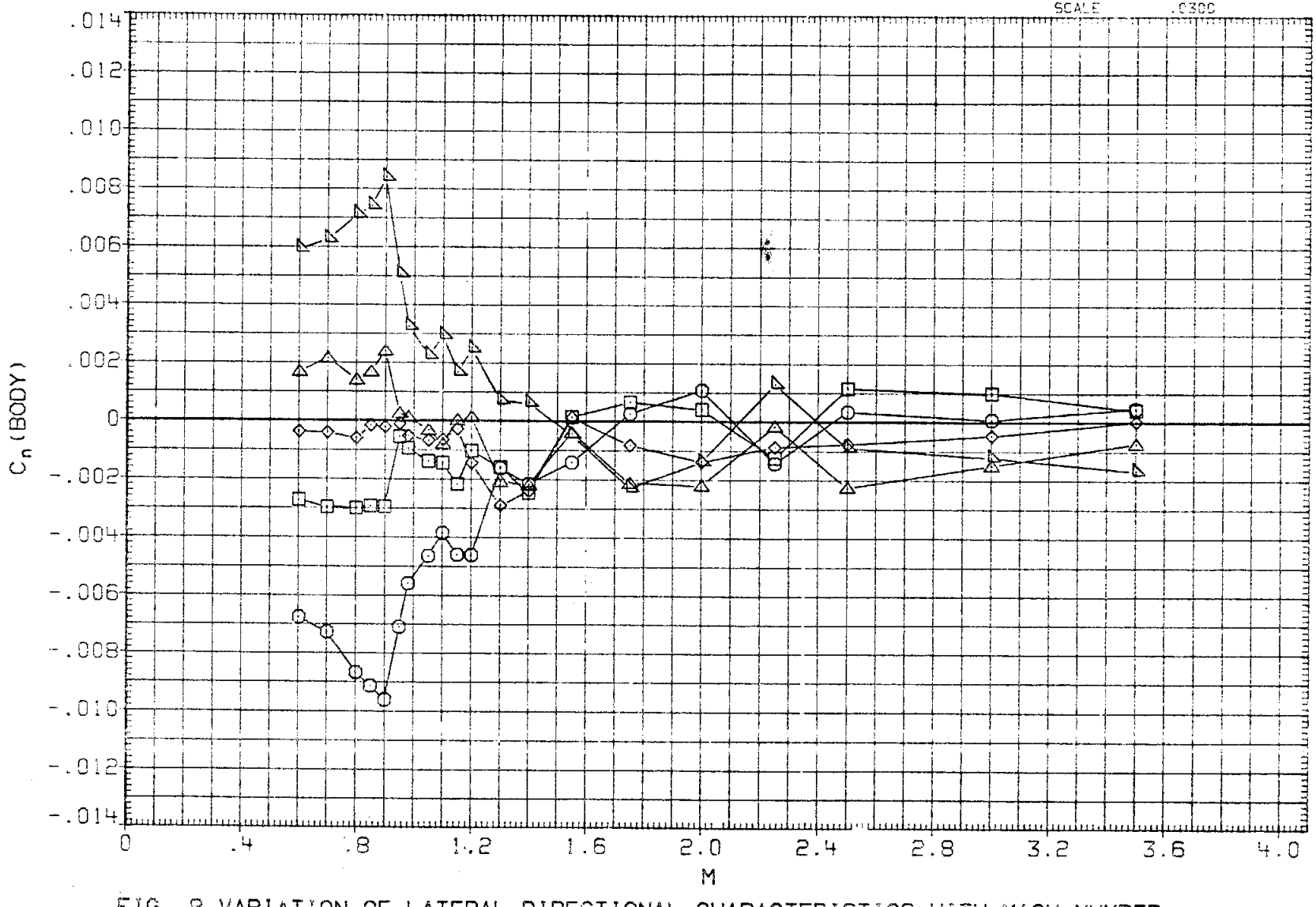


FIG. 8 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH MACH NUMBER

(B)ALPHA = 4.00

DATA SET	SYMBOL	CONFIGURATION
RE7913	○	ARC 11-97-87-094 0A161 ORBITER
RE7914	□	ARC 11-97-87-094 0A161 ORBITER
RE7915	◇	ARC 11-97-87-094 0A161 ORBITER
RE7916	△	ARC 11-97-87-094 0A161 ORBITER
RE7917	▽	ARC 11-97-87-094 0A161 ORBITER

BETA	ELEVON	AILRON	BDFLAP
-5.000	.000	.000	-7.170
-2.000	.000	.000	-7.170
.000	.000	.000	-7.170
2.000	.000	.000	-7.170
5.000	.000	.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

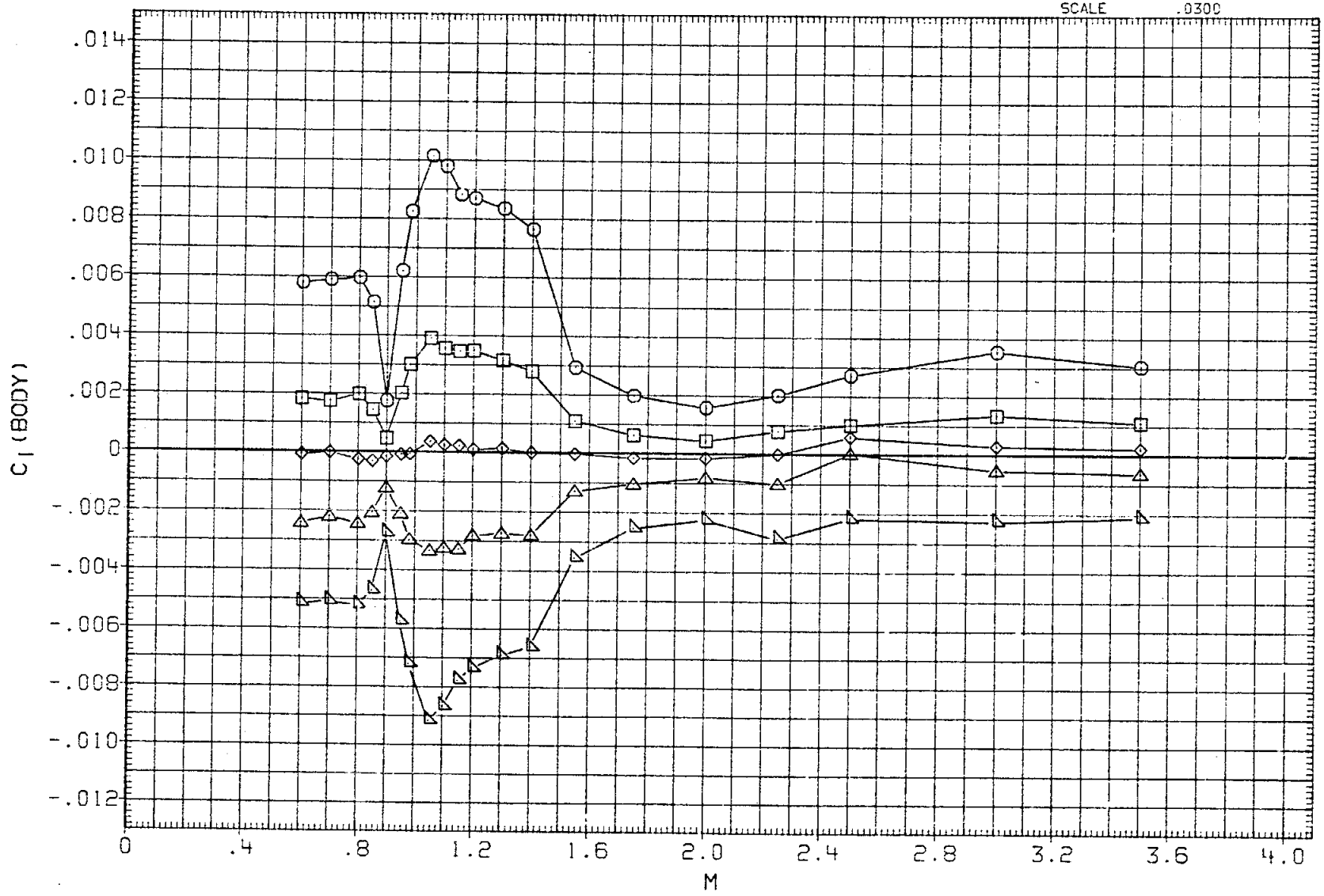


FIG. 8 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH MACH NUMBER

(B)ALPHA = 4.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	RDFLAP
[illegible]	○	ARC 11-97-87-094 0A161 ORBITER	-5.000	.000	.000	-7.170
[illegible]	□	ARC 11-97-87-094 0A161 ORBITER	[illegible]	.000	.000	[illegible]
[illegible]	◇	ARC 11-97-87-094 0A161 ORBITER	.000	.000	.000	-7.170
[illegible]	△	ARC 11-97-87-094 0A161 ORBITER	2.000	.000	.000	-7.170
[illegible]	▽	ARC 11-97-87-094 0A161 ORBITER	5.000	.000	.000	-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	935.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	376.8000	IN. ZO
SCALE	.0300	

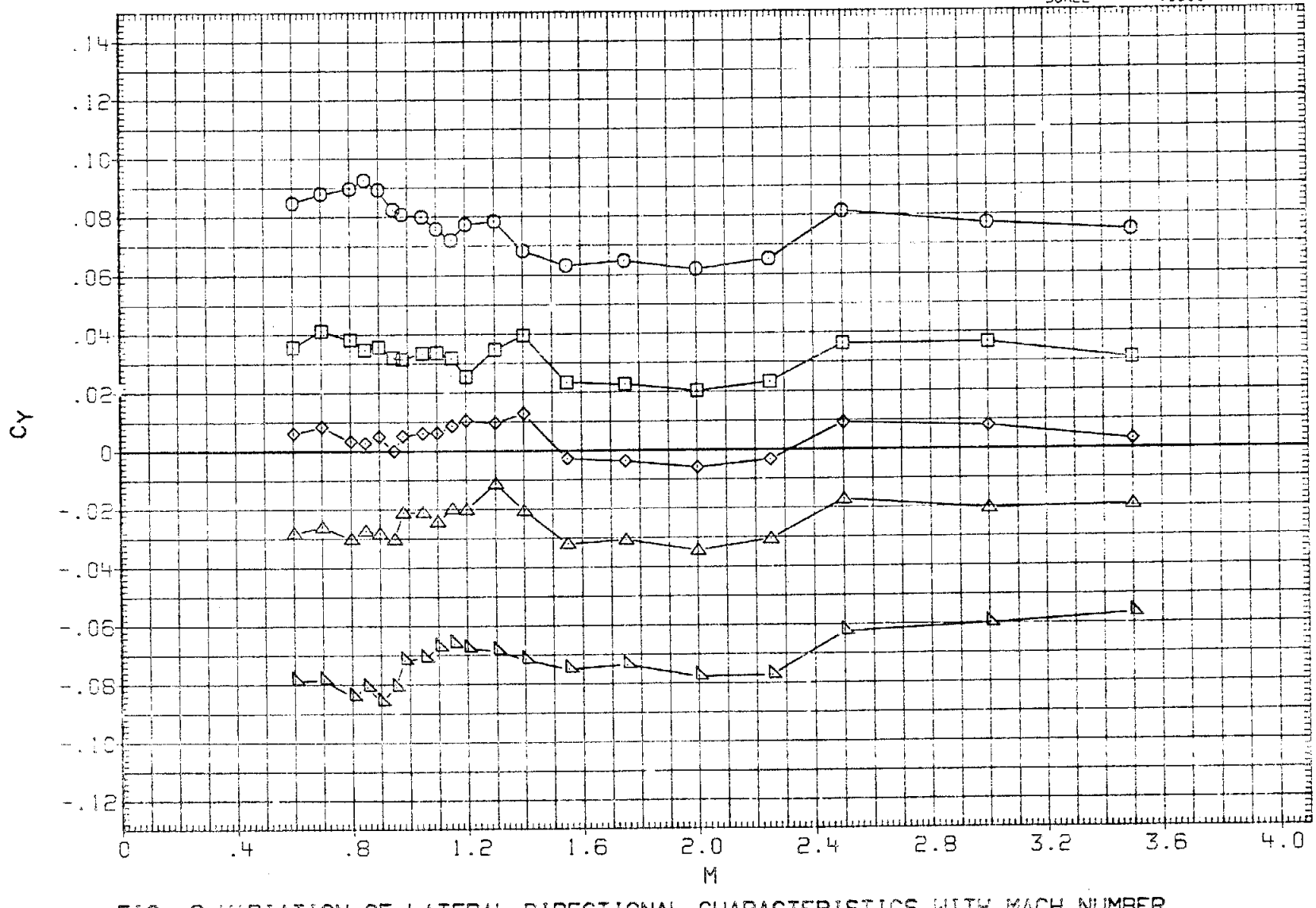


FIG. 8 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH MACH NUMBER

IC:ALPHA = 8.00

DATA SET	SYMBOL	CONFIGURATION
RE7913	○	ARC 11-97-87-094 OA161 ORBITER
RE7914	□	ARC 11-97-87-094 OA161 ORBITER
RE7915	◇	ARC 11-97-87-094 OA161 ORBITER
RE7916	△	ARC 11-97-87-094 OA161 ORBITER
RE7917	▽	ARC 11-97-87-094 OA161 ORBITER

BETA	ELEVON	AILRON	BDFLAP
-5.000	.000	.000	-7.170
-2.000	.000	.000	-7.170
.000	.000	.000	-7.170
2.000	.000	.000	-7.170
5.000	.000	.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

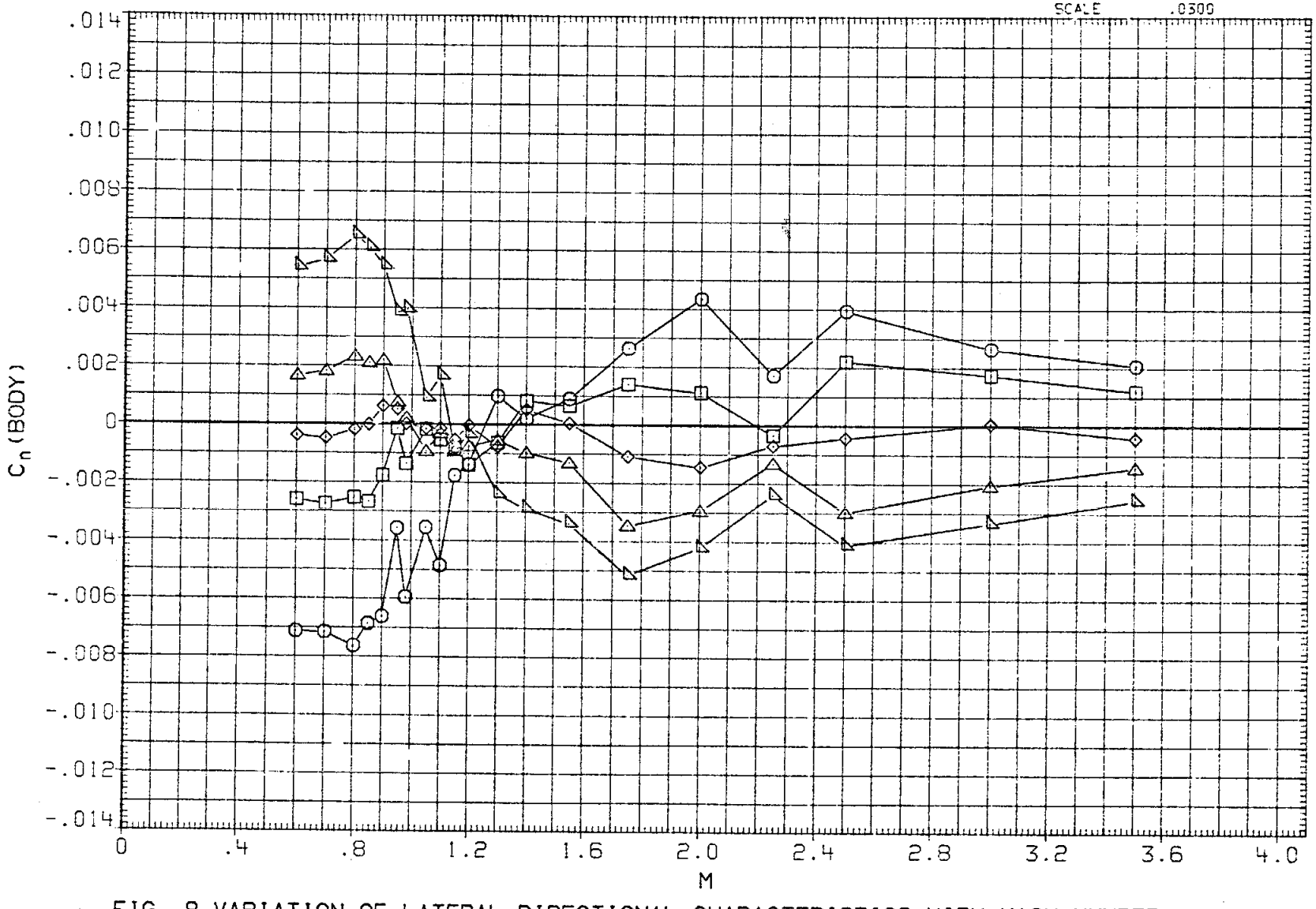


FIG. 8 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH MACH NUMBER

(C) ALPHA = 8.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
RE7913	○	ARC 11-97-87-094 OA161 ORBITER	-5.000	.000	.000	-7.170
RE7914	□	ARC 11-97-87-094 OA161 ORBITER	-2.000	.000	.000	-7.170
RE7915	◇	ARC 11-97-87-094 OA161 ORBITER	.000	.000	.000	-7.170
RE7916	△	ARC 11-97-87-094 OA161 ORBITER	2.000	.000	.000	-7.170
RE7917	▽	ARC 11-97-87-094 OA161 ORBITER	5.000	.000	.000	-7.170

REFERENCE INFORMATION		
SREF	2690.6000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

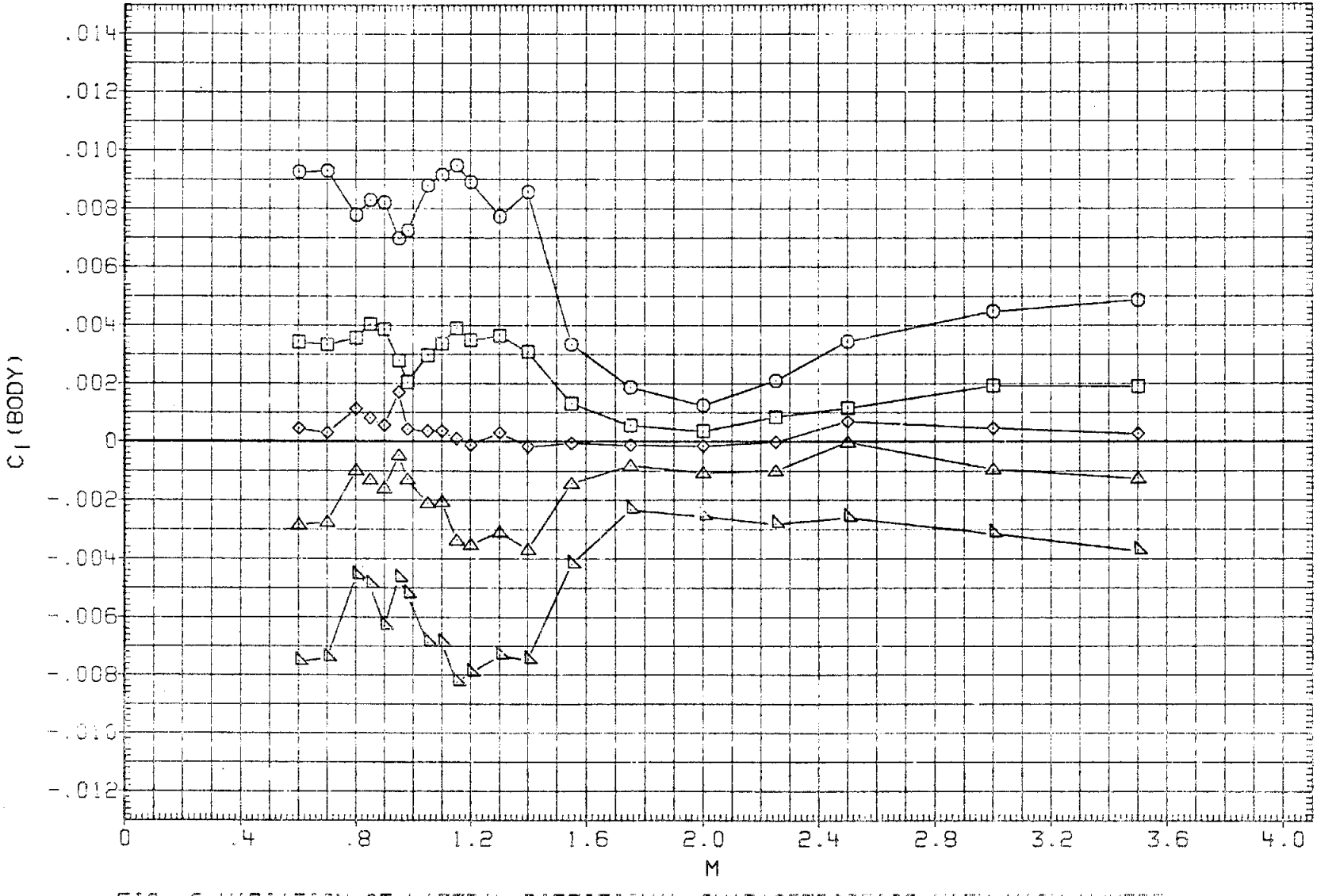


FIG. 8 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH MACH NUMBER

(C)ALPHA = 8.00

DATA SET	SYMBOL	CONFIGURATION
RE7913	○	ARC 11-97-87-094 OA161 ORBITER
RE7914	□	ARC 11-97-87-094 OA161 ORBITER
RE7915	◇	ARC 11-97-87-094 OA161 ORBITER
RE7916	△	ARC 11-97-87-094 OA161 ORBITER
RE7917	◁	ARC 11-97-87-094 OA161 ORBITER

BETA	ELEVON	AILRON	BDFLAP
-5.000	.000	.000	-7.170
-2.000	.000	.000	-7.170
.000	.000	.000	-7.170
2.000	.000	.000	-7.170
5.000	.000	.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

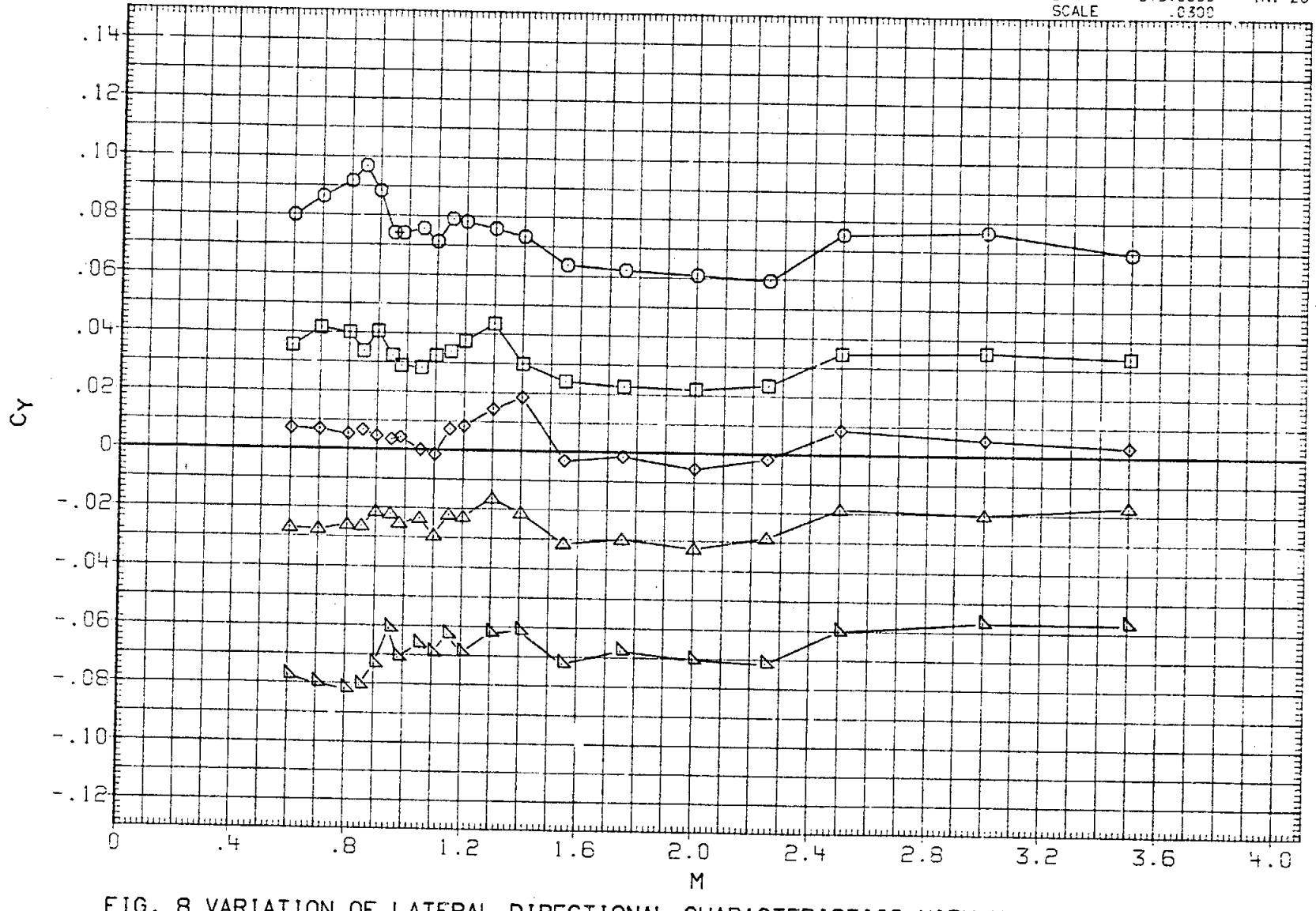


FIG. 8 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH MACH NUMBER

(D) ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION
R27813	○	ARC 11-97-87-094 OA161 ORBITER
R27814	□	ARC 11-97-87-094 OA161 ORBITER
R27815	◇	ARC 11-97-87-094 OA161 ORBITER
R27816	▷	ARC 11-97-87-094 OA161 ORBITER
R27817	△	ARC 11-97-87-094 OA161 ORBITER

BETA	ELEVON	AILRON	BDFLAP
-5.000	.000	.000	-7.170
-2.000	.000	.000	-7.170
.000	.000	.000	-7.170
2.000	.000	.000	-7.170
5.000	.000	.000	-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6900	IN.
XMRP	1076.5800	IN. XC
YMRP	.0000	IN. YC
ZMRP	375.0000	IN. ZC
SCALE	.0300	

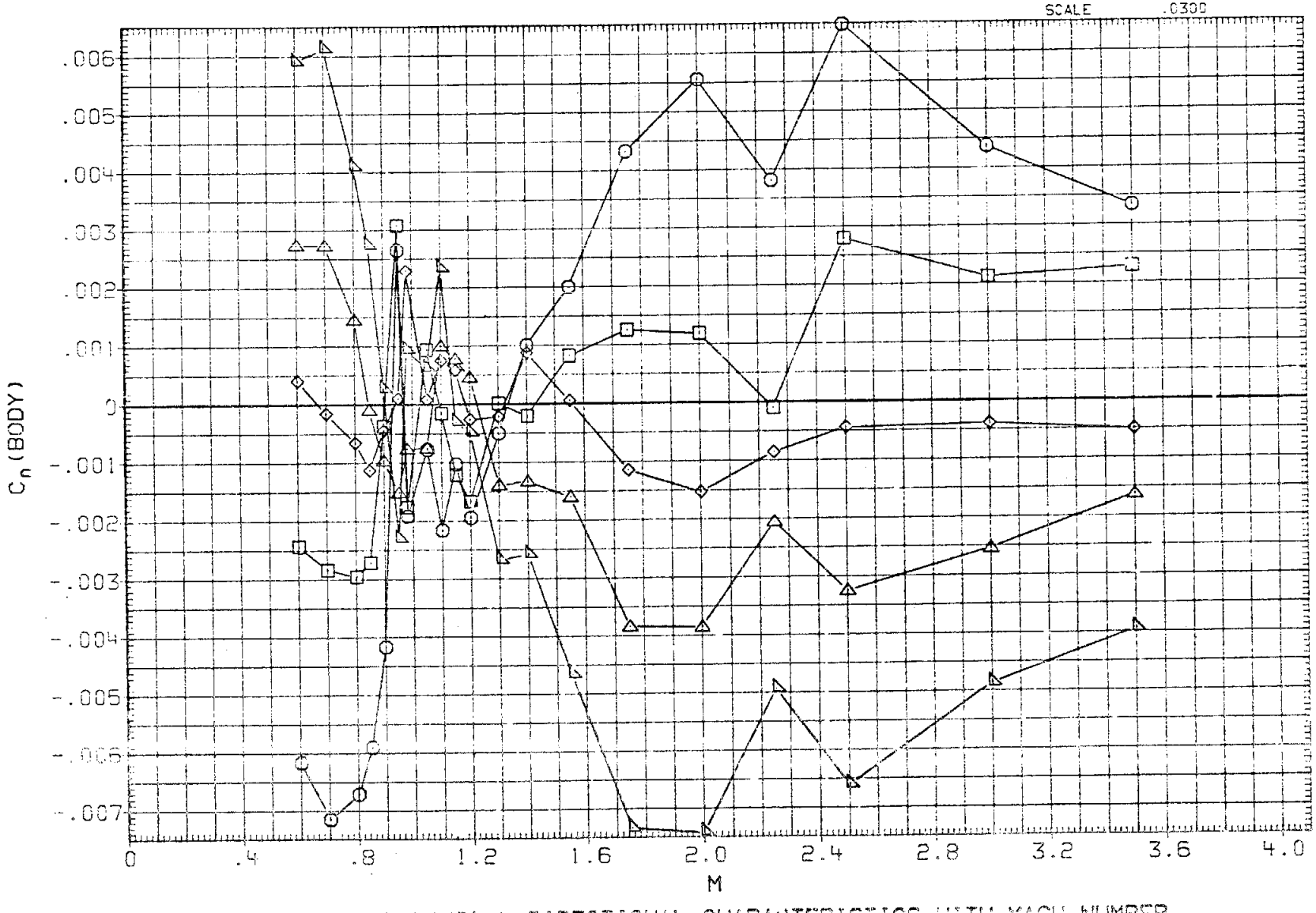


FIG. 8 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH MACH NUMBER

(D) ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION
RE7913	○	ARC 11-97-87-094 OA161 ORBITER
RE7914	□	ARC 11-97-87-094 OA161 ORBITER
RE7915	◇	ARC 11-97-87-094 OA161 ORBITER
RE7916	△	ARC 11-97-87-094 OA161 ORBITER
RE7917	◁	ARC 11-97-87-094 OA161 ORBITER

BETA	ELEVON	AILRON	BDFLAP
-5.000	.000	.000	-7.170
-2.000	.000	.000	-7.170
.000	.000	.000	-7.170
2.000	.000	.000	-7.170
5.000	.000	.000	-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

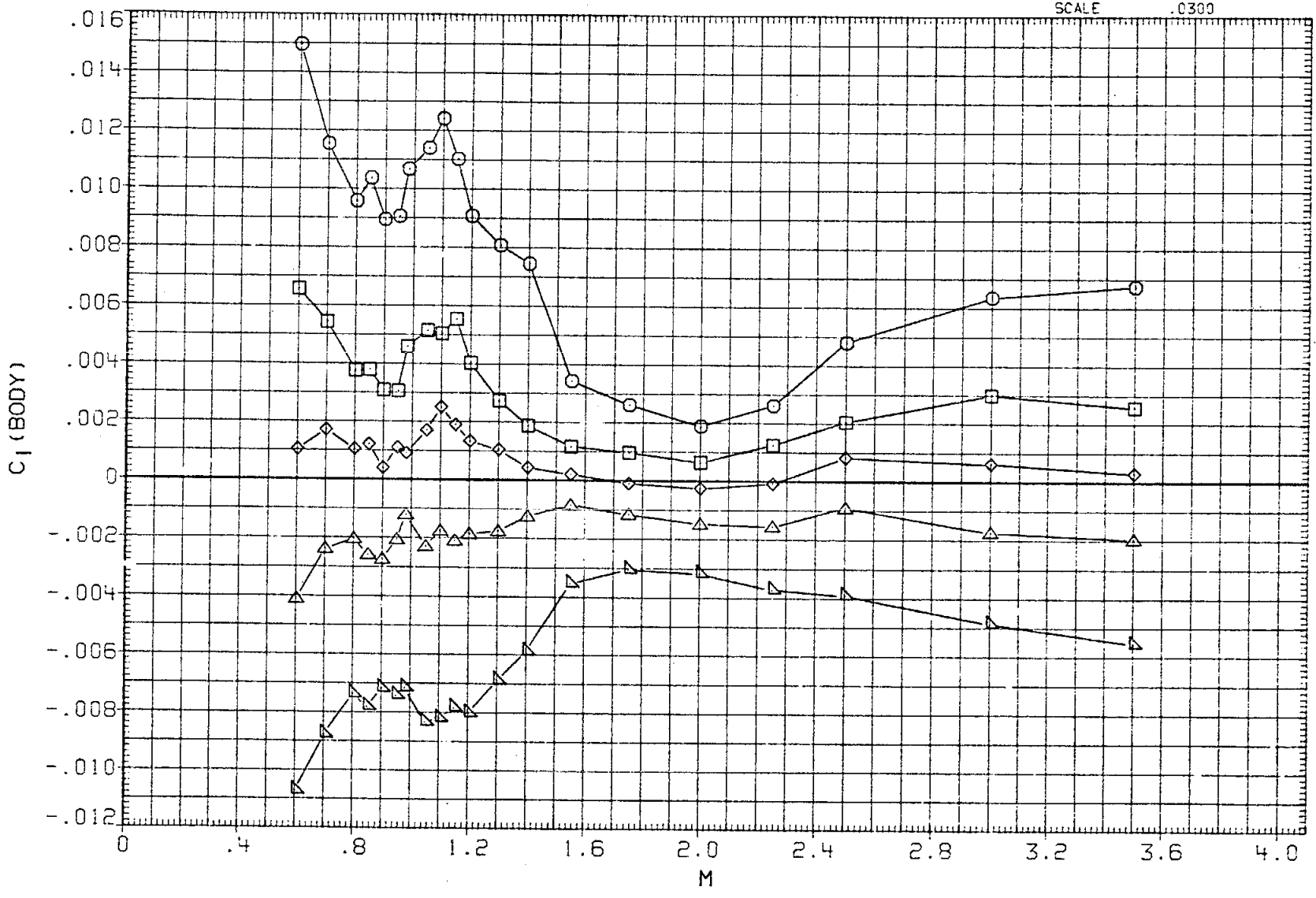


FIG. 8 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH MACH NUMBER

(D)ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	RUDDER
RE7913	□	ARC 11-97-87-094 OA161 ORBITER	-4.000	.000	.000	-7.170
RE7914	○	ARC 11-97-87-094 OA161 ORBITER	-2.000	.000	.000	-7.170
RE7915	◇	ARC 11-97-87-094 OA161 ORBITER	.000	.000	.000	-7.170
RE7916	△	ARC 11-97-87-094 OA161 ORBITER	2.000	.000	.000	-7.170
RE7917	▽	ARC 11-97-87-094 OA161 ORBITER	5.000	.000	.000	-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.9000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

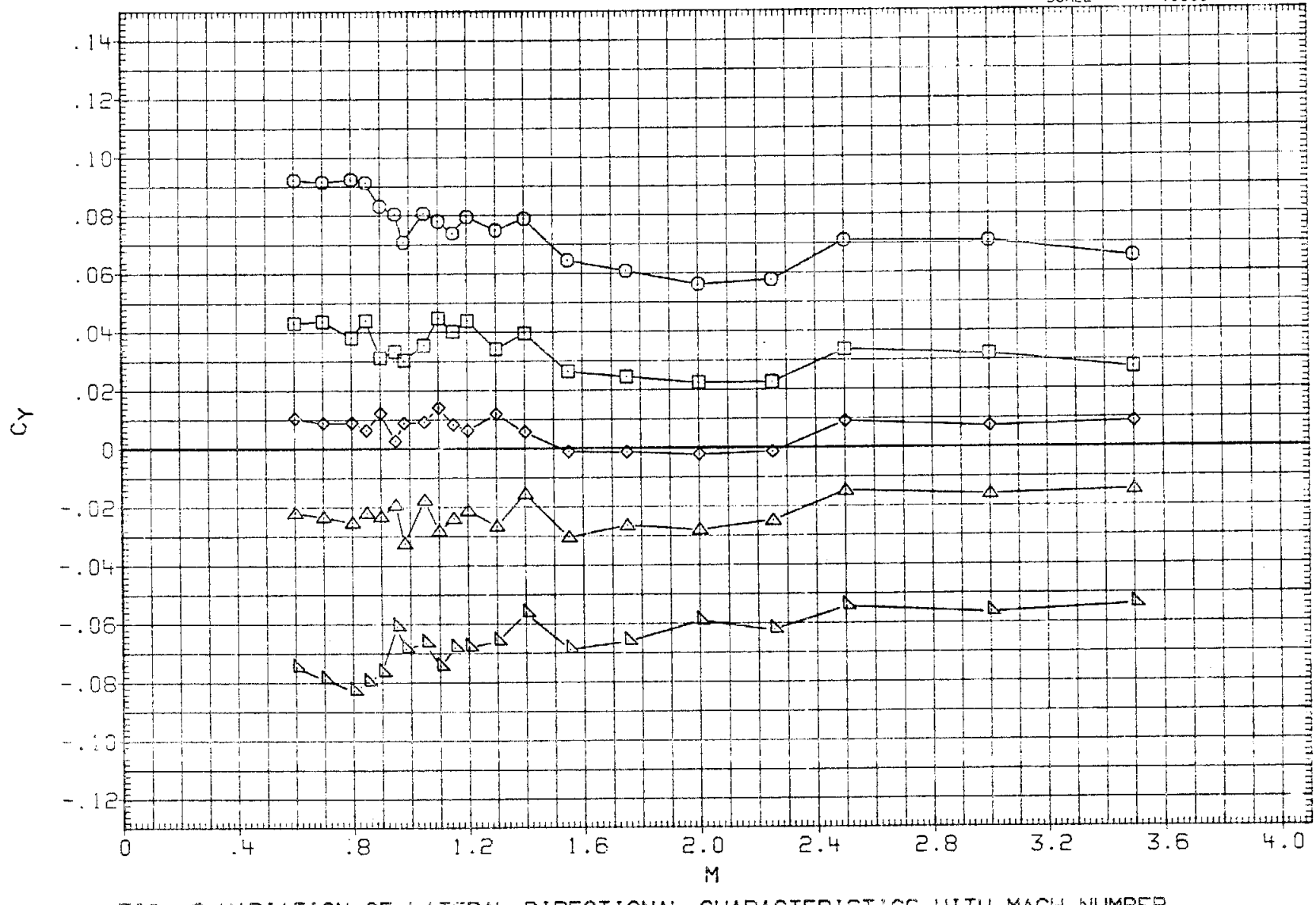


FIG 8 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH MACH NUMBER

(E)ALPHA = 16.00

DATA SET	SYMBOL	CONFIGURATION
RE7913	○	ARC 11-97-87-094 OA161 ORBITER
RE7914	□	ARC 11-97-87-094 OA161 ORBITER
RE7915	◇	ARC 11-97-87-094 OA161 ORBITER
RE7916	△	ARC 11-97-87-094 OA161 ORBITER
RE7917	◁	ARC 11-97-87-094 OA161 ORBITER

BETA	ELEVON	AILRON	BOFLAP
-5.000	.000	.000	-7.170
-2.000	.000	.000	-7.170
.000	.000	.000	-7.170
2.000	.000	.000	-7.170
5.000	.000	.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

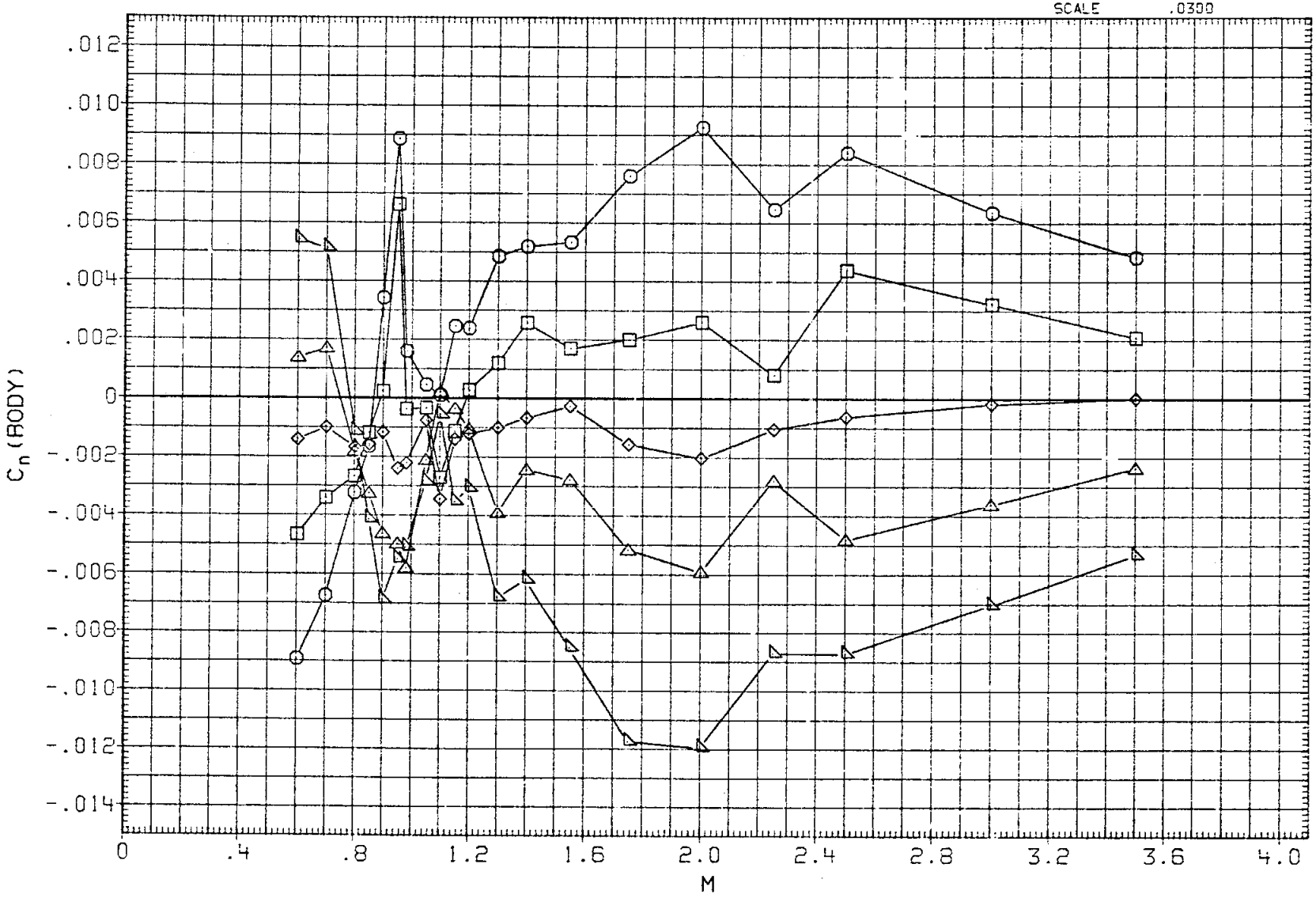


FIG. 8 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH MACH NUMBER

(E)ALPHA = 16.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
RE7913	○	ARC 11-97-87-094 0A151 ORBITER	-5.000	.000	000	-7.170
RE7914	□	ARC 11-97-87-094 0A161 ORBITER	-2.000	.000	000	-7.170
RE7915	◇	ARC 11-97-87-094 0A161 ORBITER	.000	.000	.000	-7.170
RE7916	△	ARC 11-97-87-094 0A161 ORBITER	2.000	.000	000	-7.170
RE7917	▽	ARC 11-97-87-094 0A161 ORBITER	5.000	.000	000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

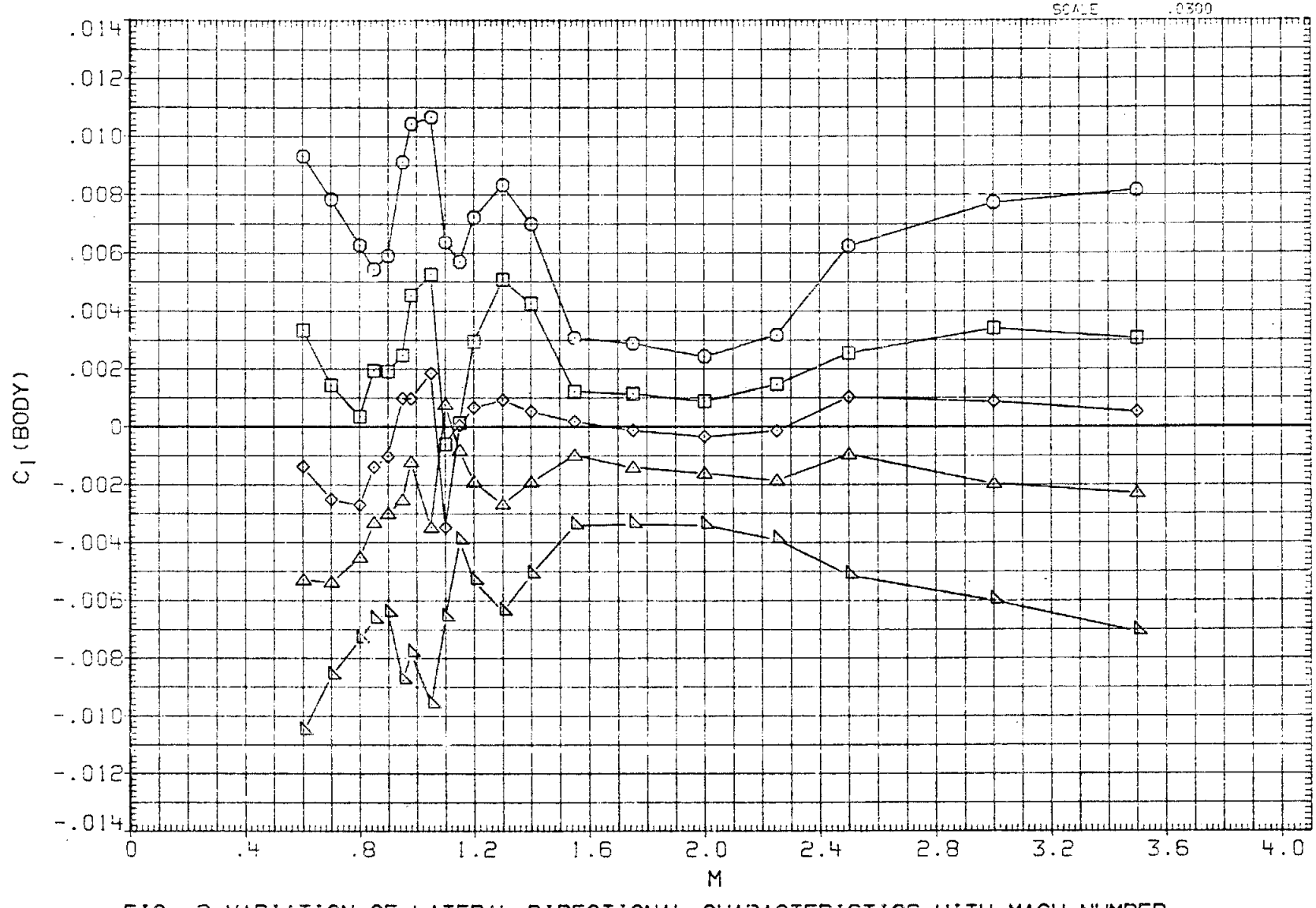


FIG. 8 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH MACH NUMBER

(E)ALPHA = 16.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
RE7913	○	ARC 11-97-87-094 0A161 ORBITER	-5.000	.000	.000	-7.170
RE7914	□	ARC 11-97-87-094 0A161 ORBITER	-2.000	.000	.000	-7.170
RE7915	◇	ARC 11-97-87-094 0A161 ORBITER	.000	.000	.000	-7.170
RE7916	△	ARC 11-97-87-094 0A161 ORBITER	2.000	.000	.000	-7.170
RE7917	◺	ARC 11-97-87-094 0A161 ORBITER	5.000	.000	.000	-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

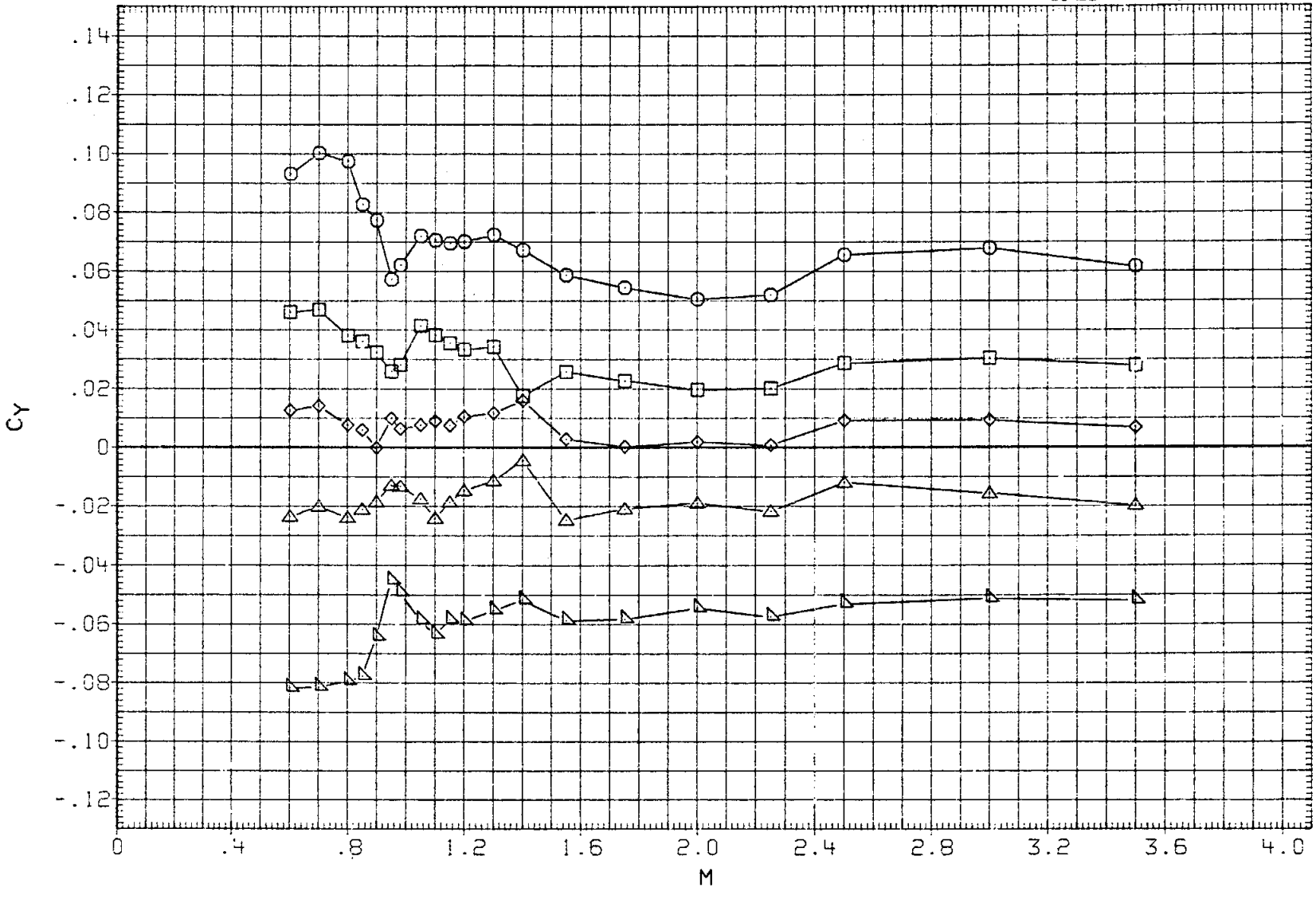


FIG. 8 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH MACH NUMBER

(F)ALPHA = 20.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
RE7913	○	ARC 11-97-87-094 OA161 ORBITER	-5.000	.000	.000	-7.170
RE7914	□	ARC 11-97-87-094 OA161 ORBITER	-2.000	.000	.000	-7.170
RE7915	◇	ARC 11-97-87-094 OA161 ORBITER	.000	.000	.000	-7.170
RE7916	△	ARC 11-97-87-094 OA161 ORBITER	2.000	.000	.000	-7.170
RE7917	▽	ARC 11-97-87-094 OA161 ORBITER	5.000	.000	.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	935.6800	IN.
XMRP	1076.6800	IN. XC
YMRP	.0000	IN. YC
ZMRP	375.0000	IN. ZC
SCALE	.0300	

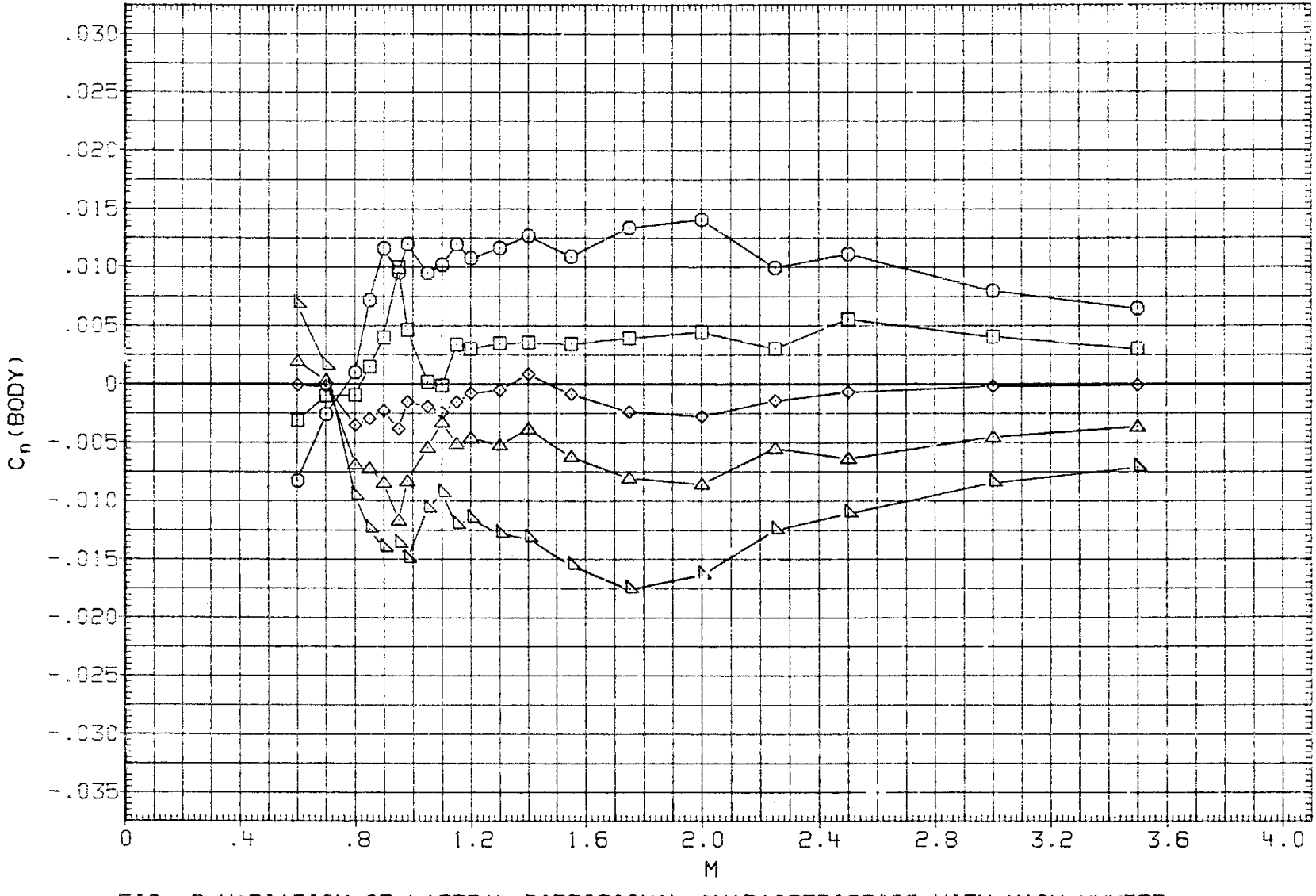


FIG. 8 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH MACH NUMBER

(F) ALPHA = 20.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
RE7913	○	ARC 11-97-87-094 OA161 ORBITER	-5.000	.000	.000	-7.170
RE7914	□	ARC 11-97-87-094 OA161 ORBITER	-2.000	.000	.000	-7.170
RE7915	◇	ARC 11-97-87-094 OA161 ORBITER	.000	.000	.000	-7.170
RE7916	△	ARC 11-97-87-094 OA161 ORBITER	2.000	.000	.000	-7.170
RE7917	▽	ARC 11-97-87-094 OA161 ORBITER	5.000	.000	.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0 ?0	

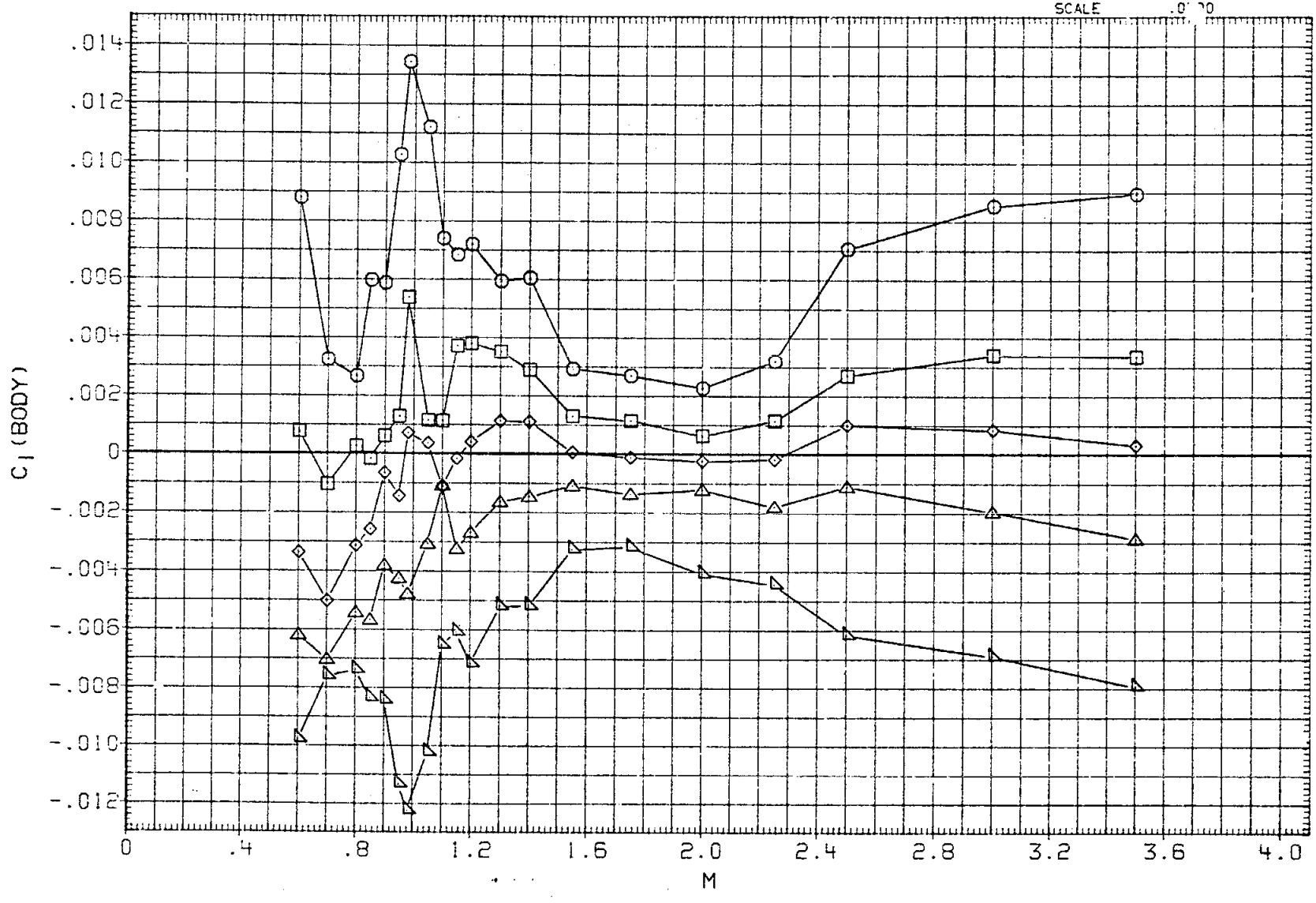


FIG. 8 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH MACH NUMBER

(F)ALPHA = 20.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
RE7913	○	ARC 11-97-87-094 OA161 ORBITER	-3.000	.000	.000	-7.170
RE7914	□	ARC 11-97-87-094 OA161 ORBITER	-2.000	.000	.000	-7.170
RE7915	◇	ARC 11-97-87-094 OA161 ORBITER	.000	.000	.000	-7.170
RE7916	△	ARC 11-97-87-094 OA161 ORBITER	2.000	.000	.000	-7.170
RE7917	▽	ARC 11-97-87-094 OA161 ORBITER	5.000	.000	.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT
LREF	474.8000	IN.
BREF	936.5800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

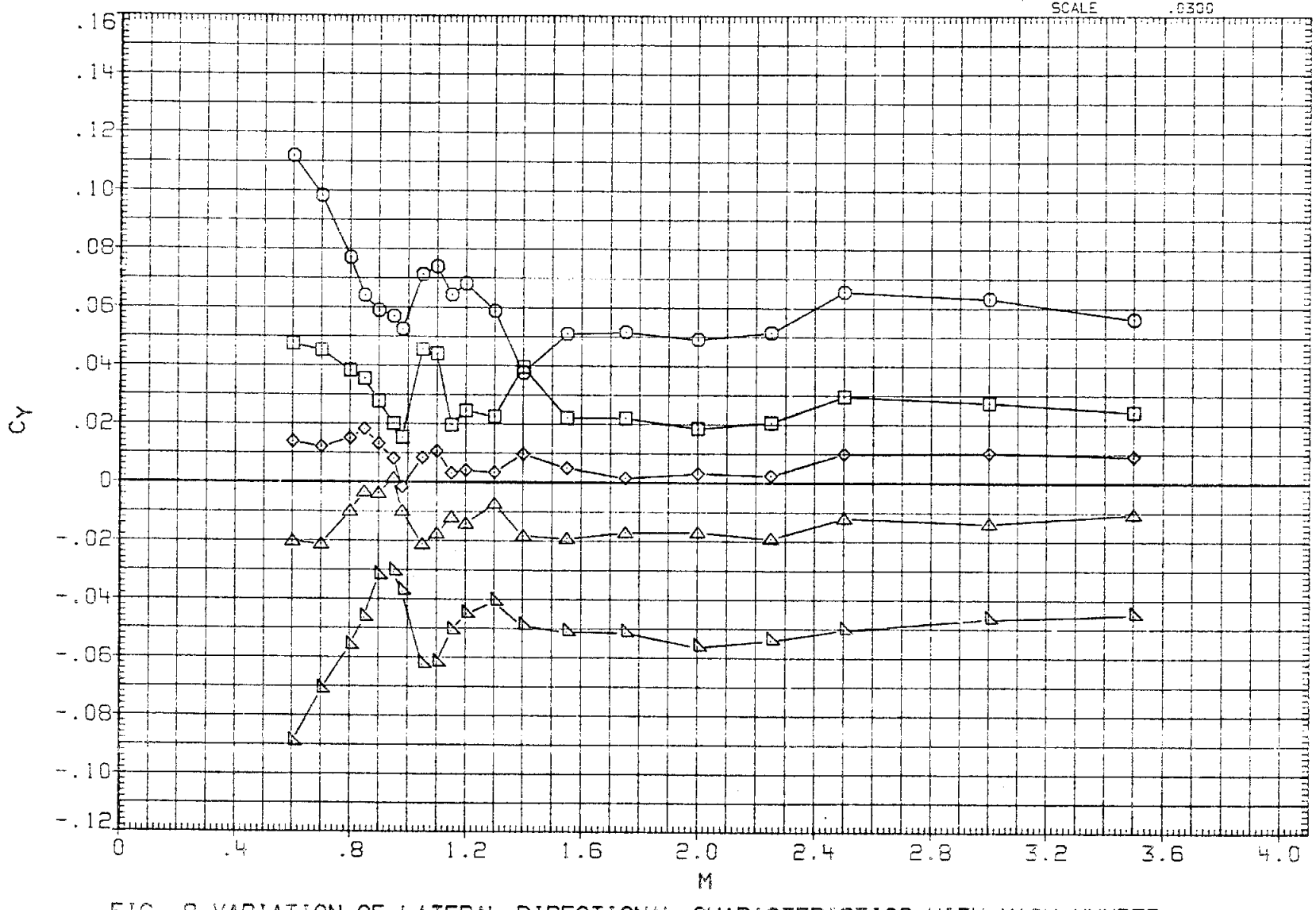


FIG. 8 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH MACH NUMBER

(G)ALPHA = 24.00

DATA SET	SYMBOL	CONFIGURATION
RE7913	○	ARC 11-97-87-094 OA161 ORBITER
RE7914	□	ARC 11-97-87-094 OA161 ORBITER
RE7915	◇	ARC 11-97-87-094 OA161 ORBITER
RE7916	△	ARC 11-97-87-094 OA161 ORBITER
RE7917	◺	ARC 11-97-87-094 OA161 ORBITER

BETA	ELEVON	AILRON	BDFLAP
-5.000	.000	.000	-7.170
-2.000	.000	.000	-7.170
.000	.000	.000	-7.170
2.000	.000	.000	-7.170
5.000	.000	.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

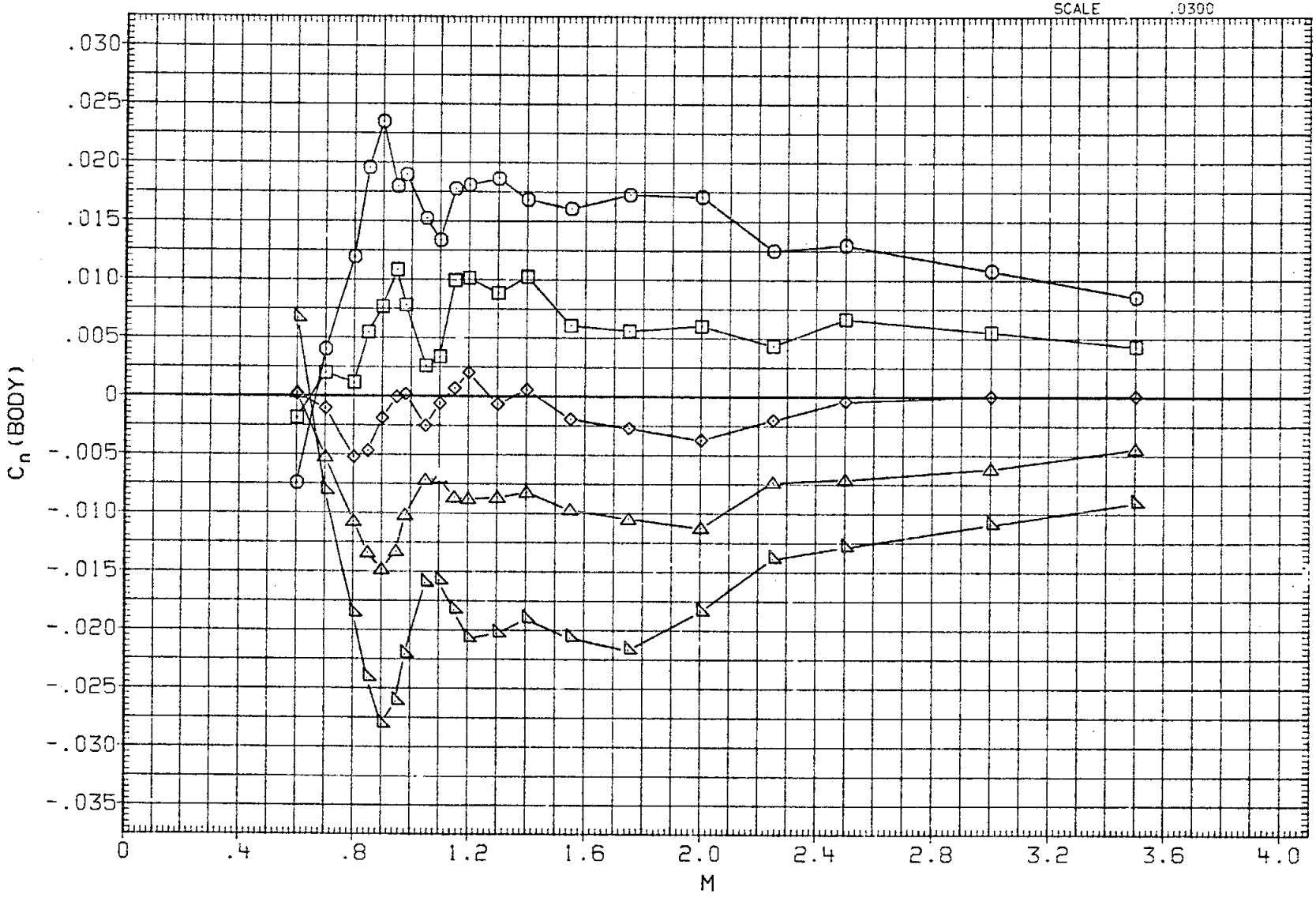


FIG. 8 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH MACH NUMBER

(G)ALPHA = 24.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
RE7913	○	ARC 11-97-87-094 OA161 ORBITER	-5.000	.000	.000	-7.170
RE7914	□	ARC 11-97-87-094 OA161 ORBITER	-2.000	.000	.000	-7.170
RE7915	◇	ARC 11-97-87-094 OA161 ORBITER	.000	.000	.000	-7.170
RE7916	△	ARC 11-97-87-094 OA161 ORBITER	2.000	.000	.000	-7.170
RE7917	▽	ARC 11-97-87-094 OA161 ORBITER	5.000	.000	.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

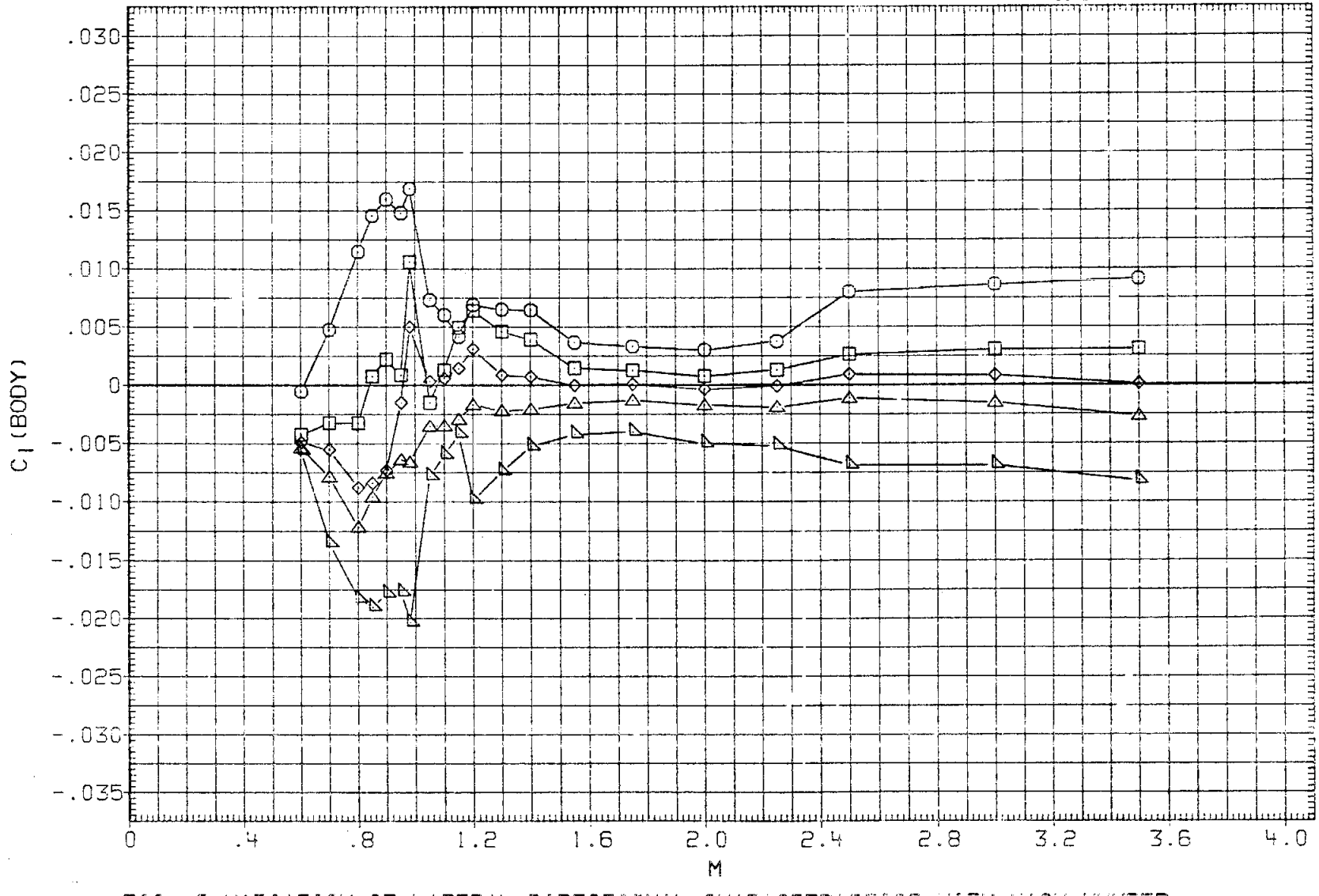


FIG. 8 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH MACH NUMBER

(G)ALPHA = 24.00

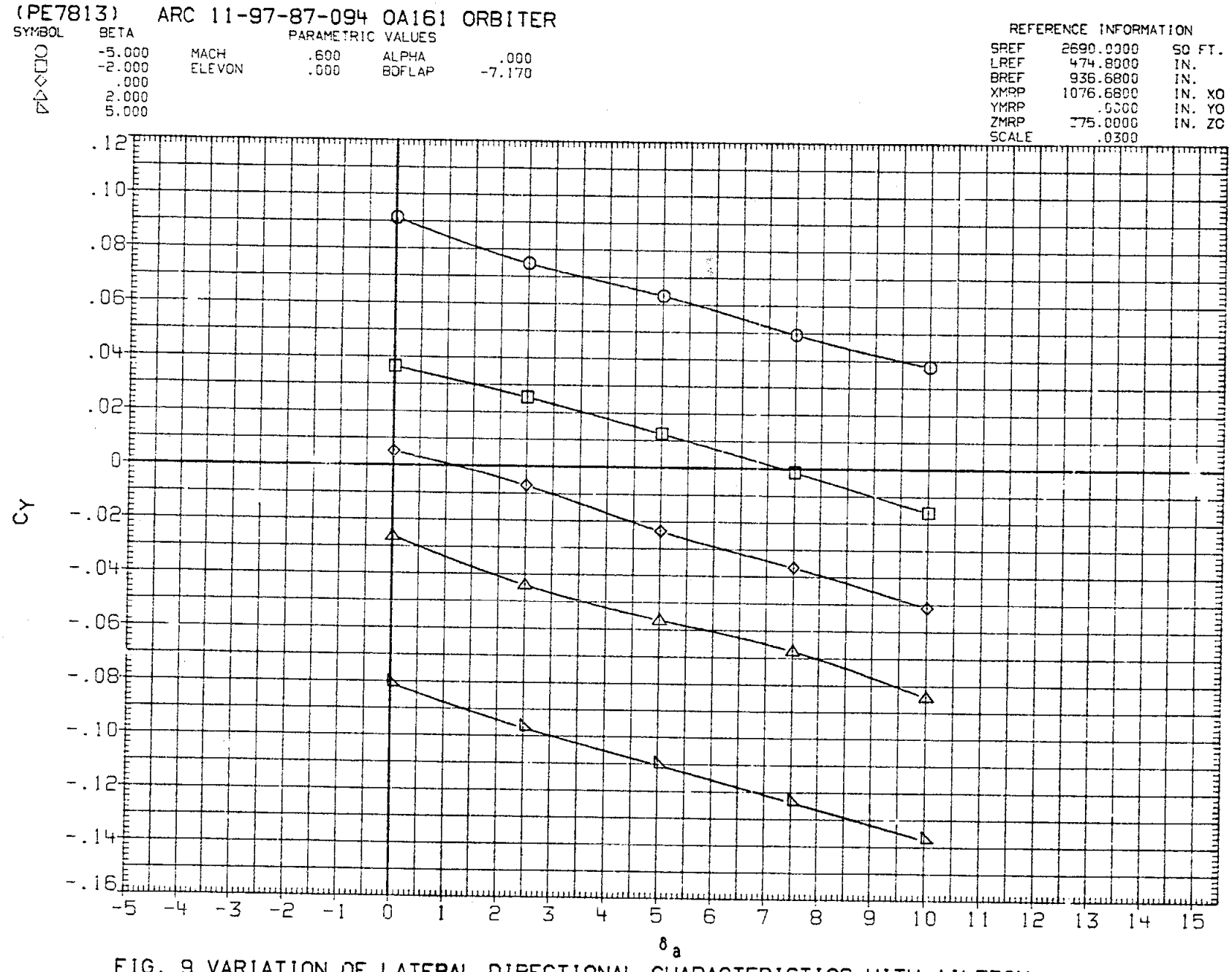


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

(PE7813) ARC 11-97-87-094 OA161 ORBITER

SYMBOL	BETA
▽	-5.000
◇	-2.000
□	.000
○	2.000
	5.000

PARAMETRIC VALUES

MACH	.600	ALPHA	4.000
ELEVON	.000	BDFLAP	-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

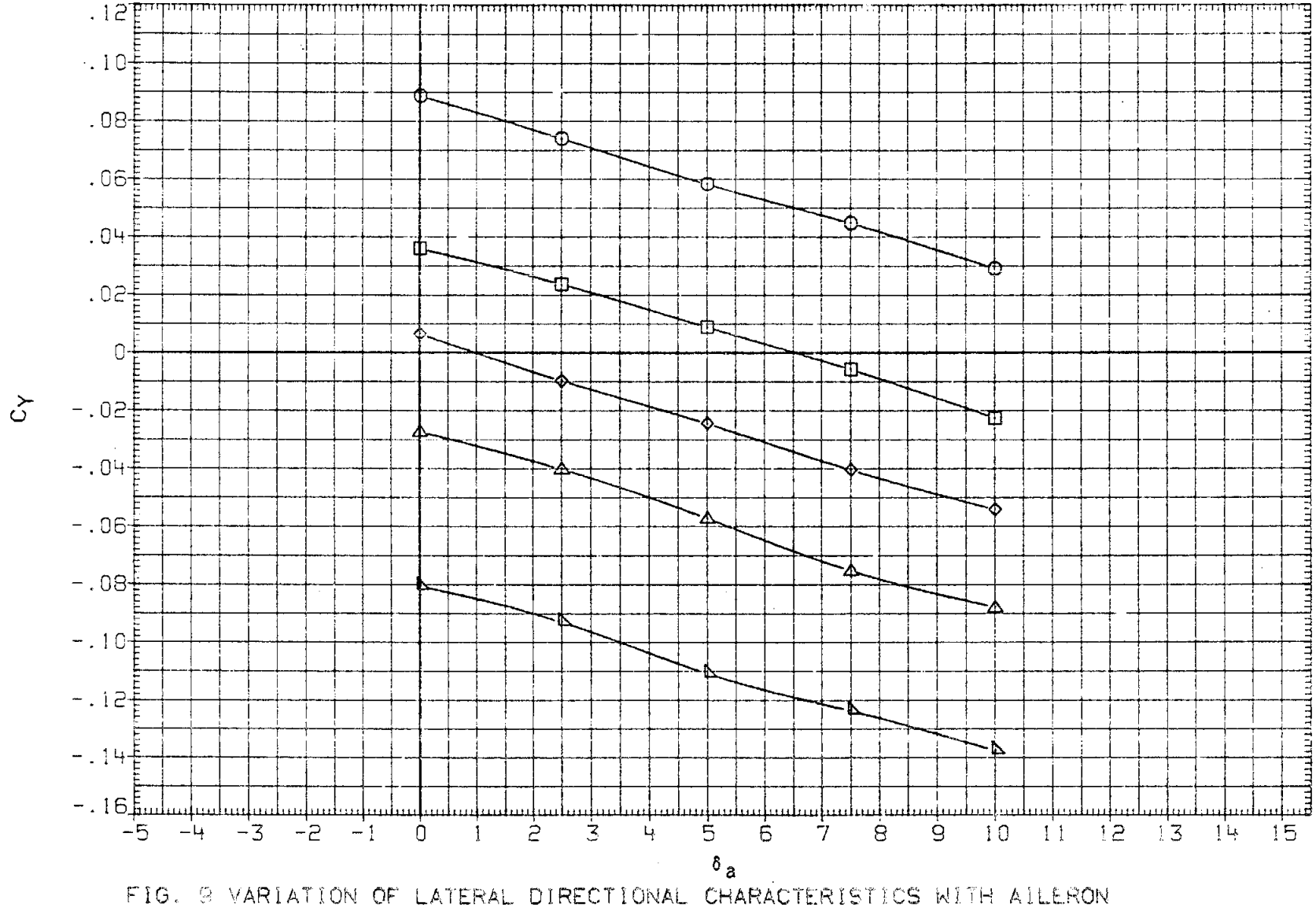


FIG. 8 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

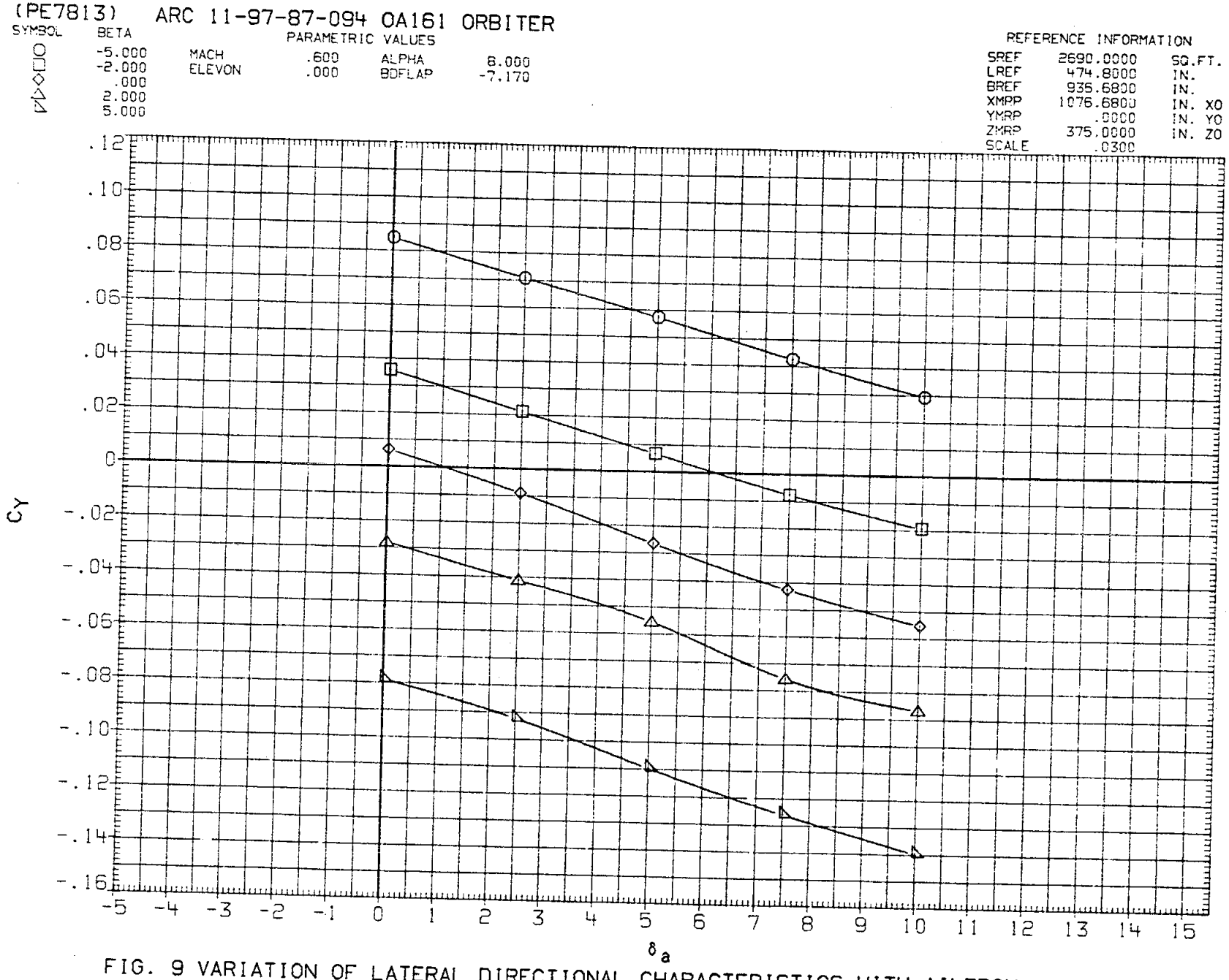


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

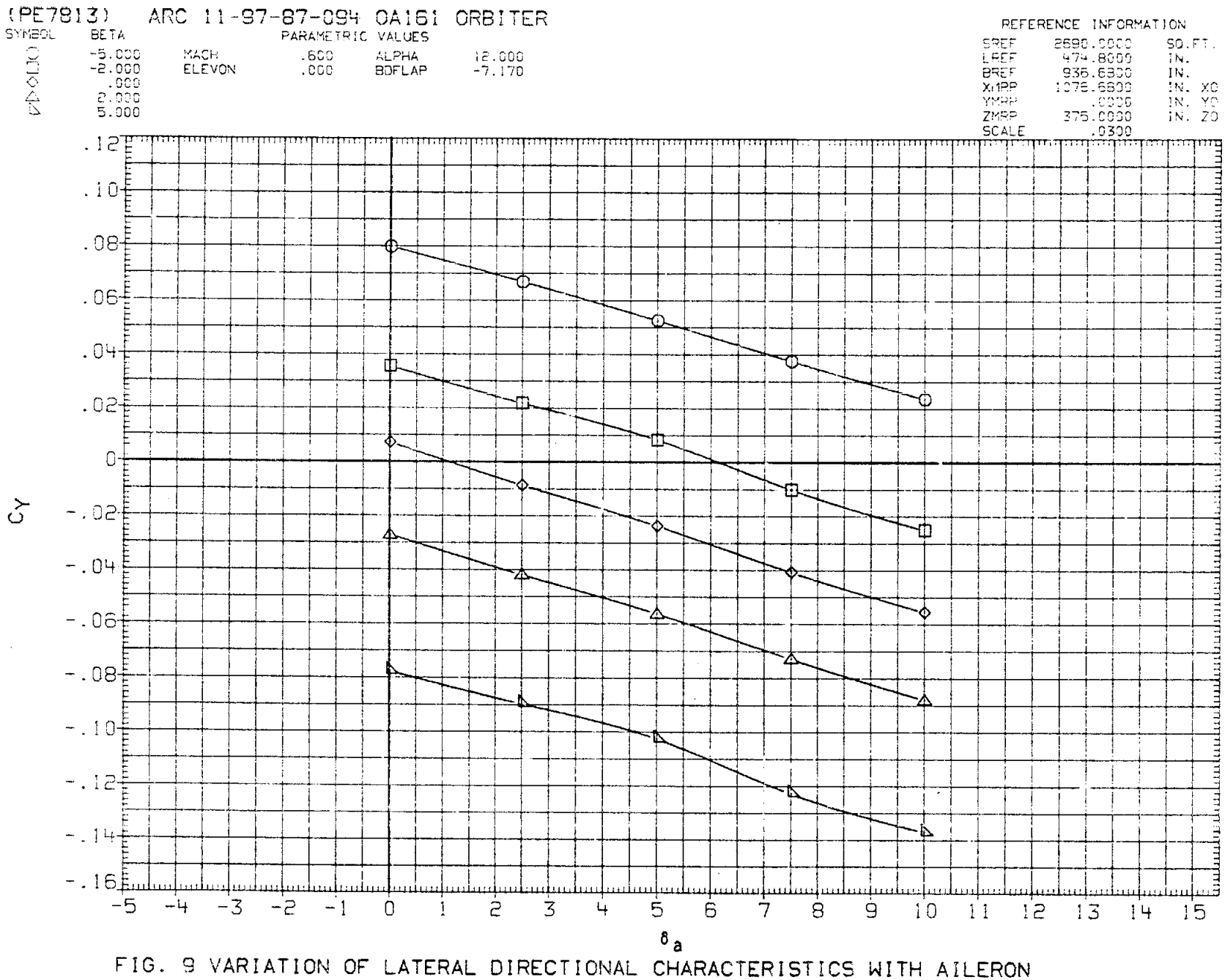


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

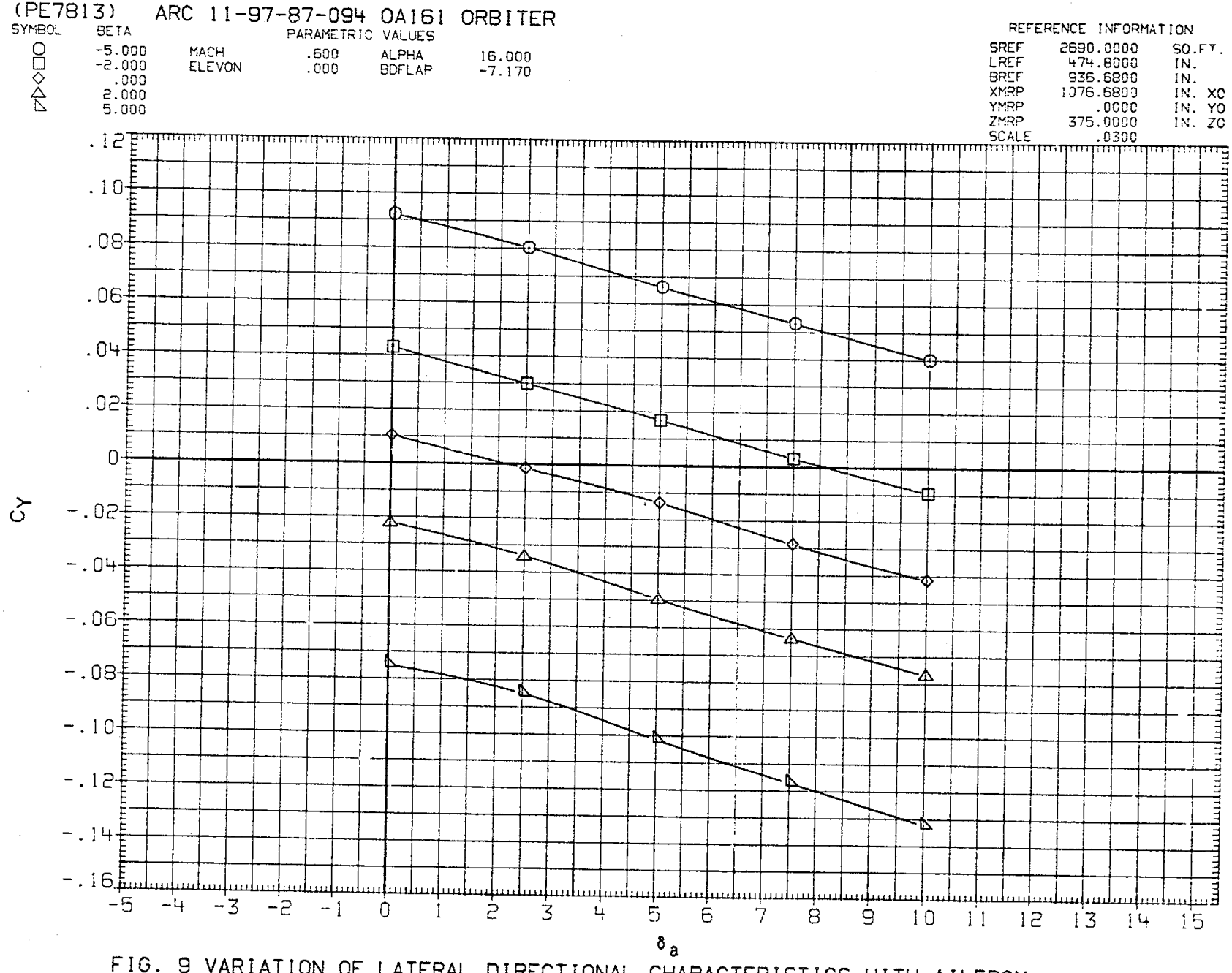


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

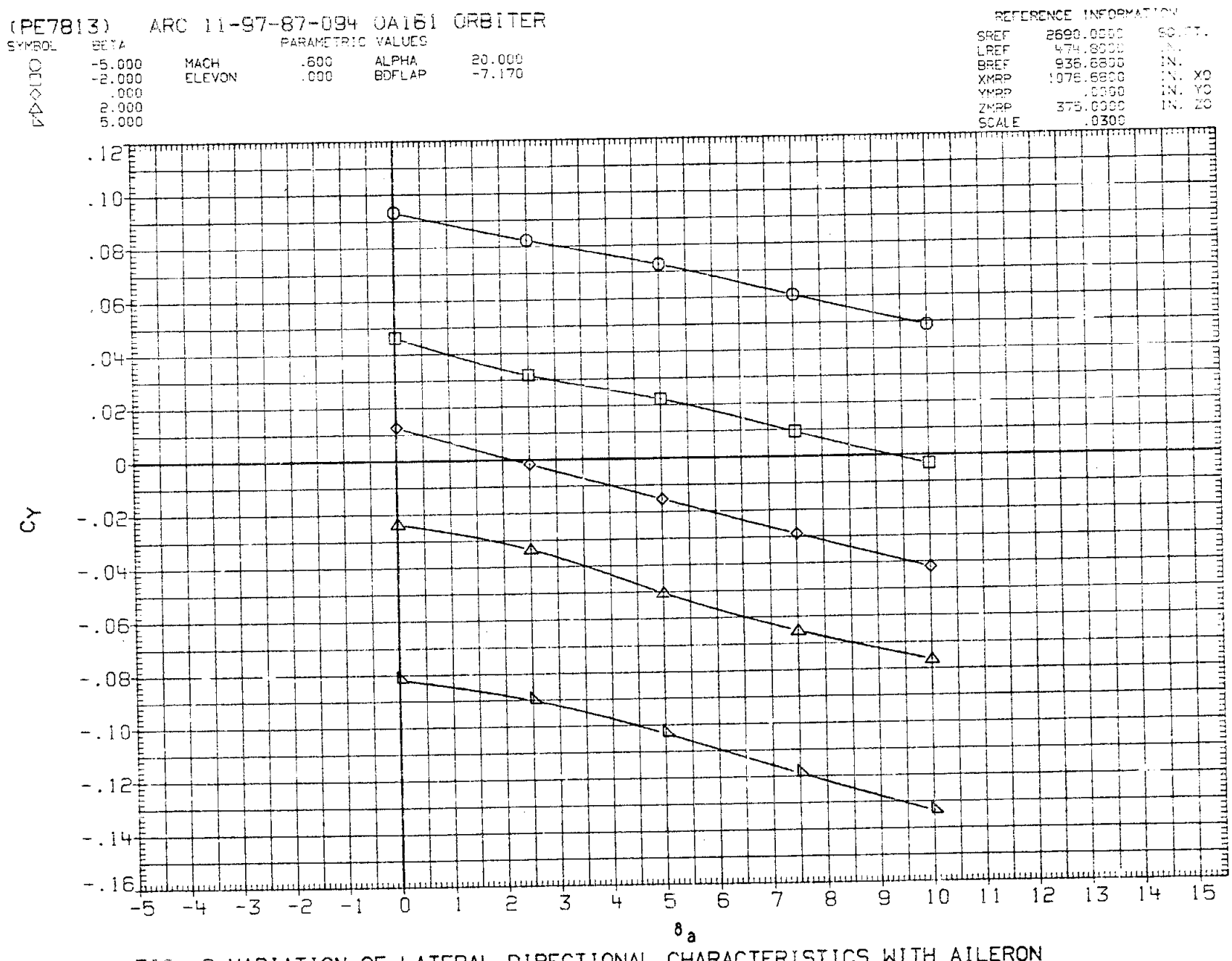


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

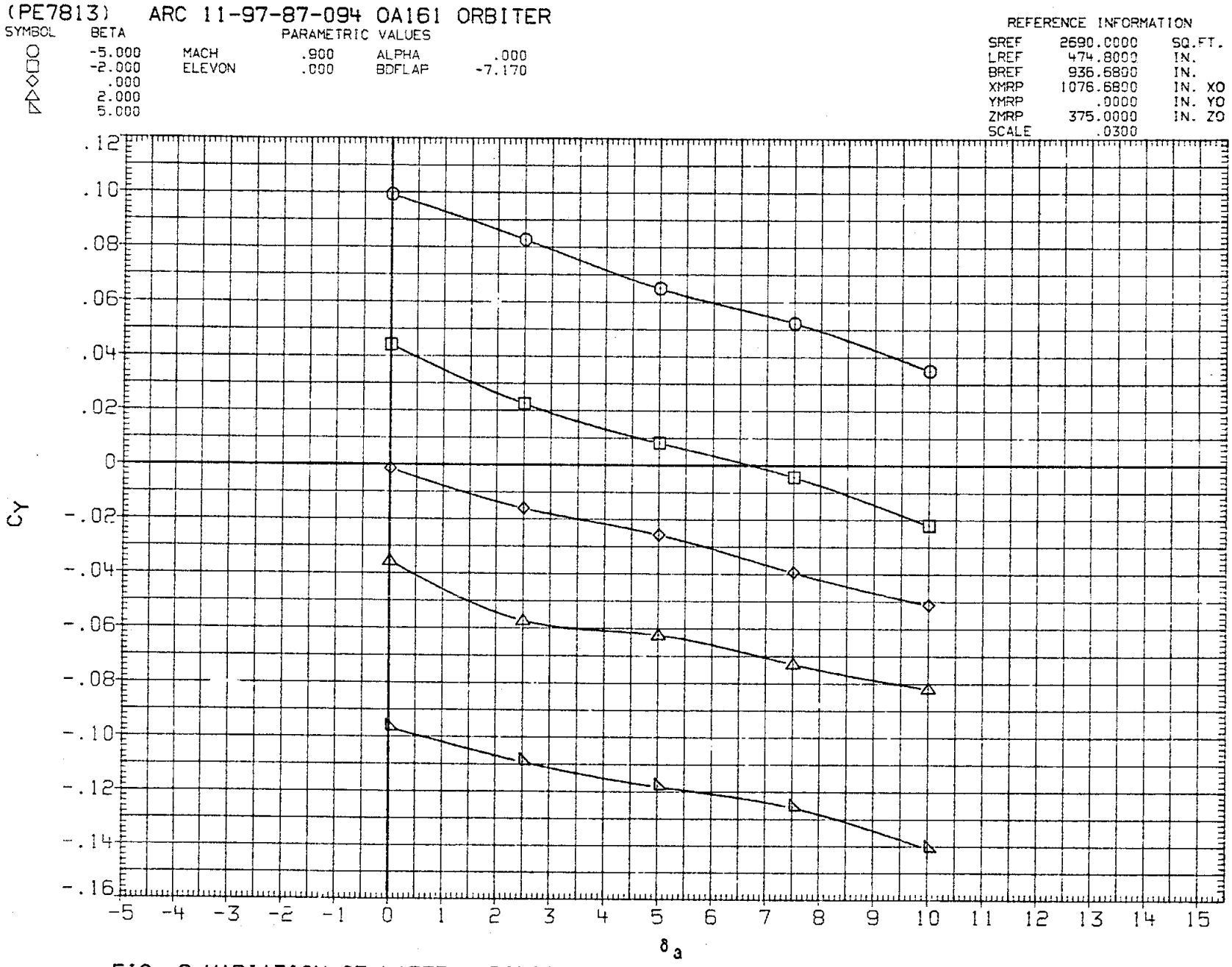


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

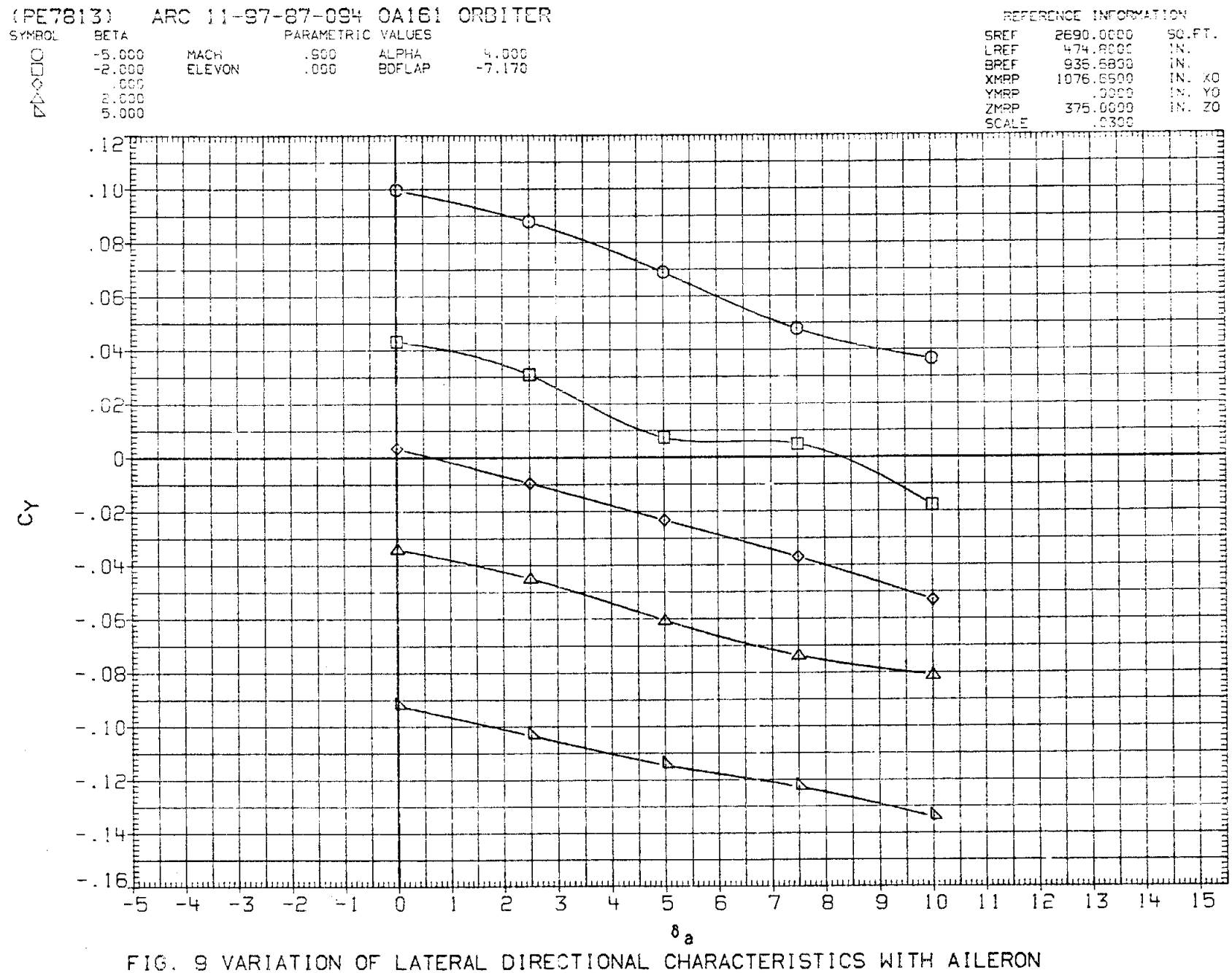


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

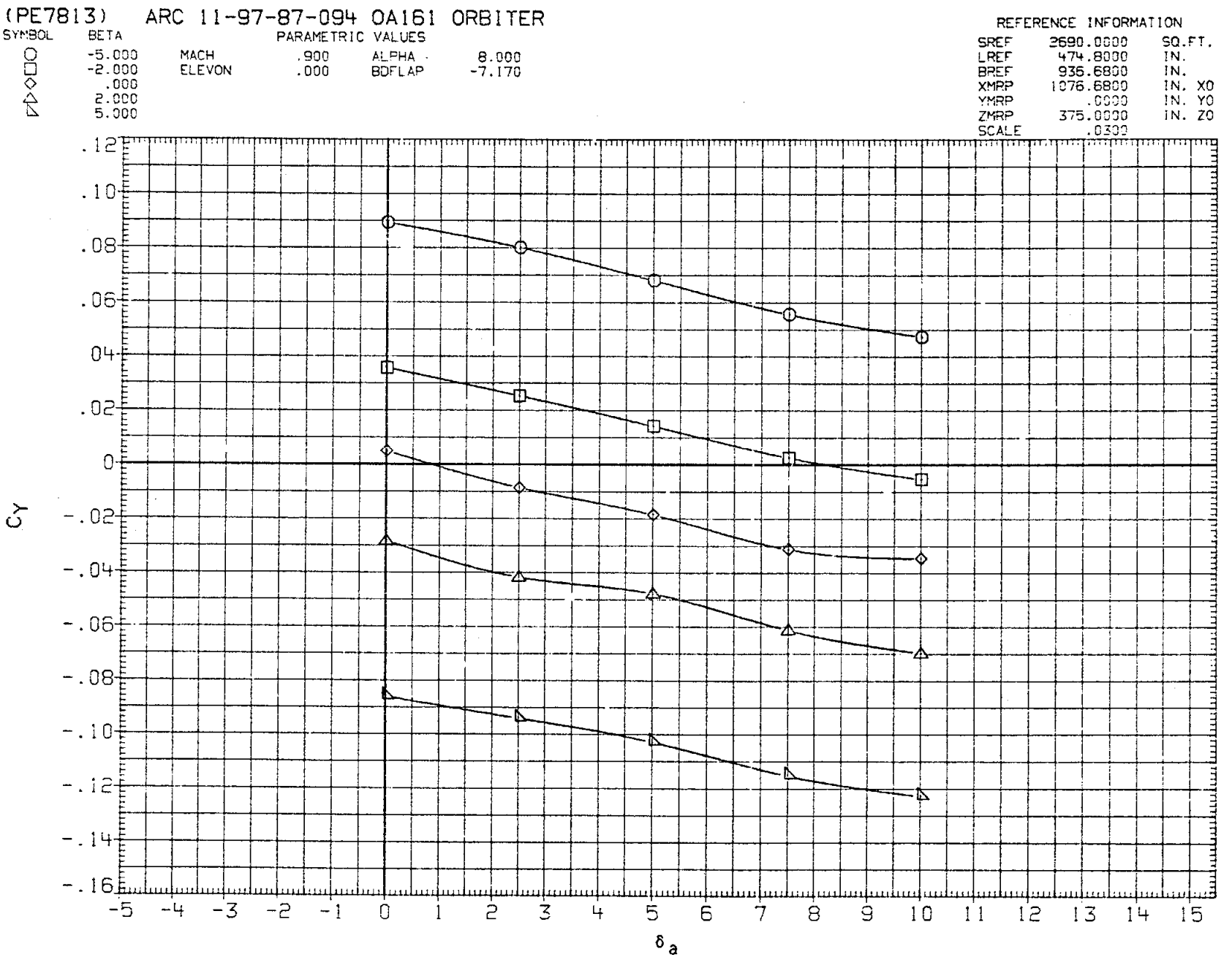


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

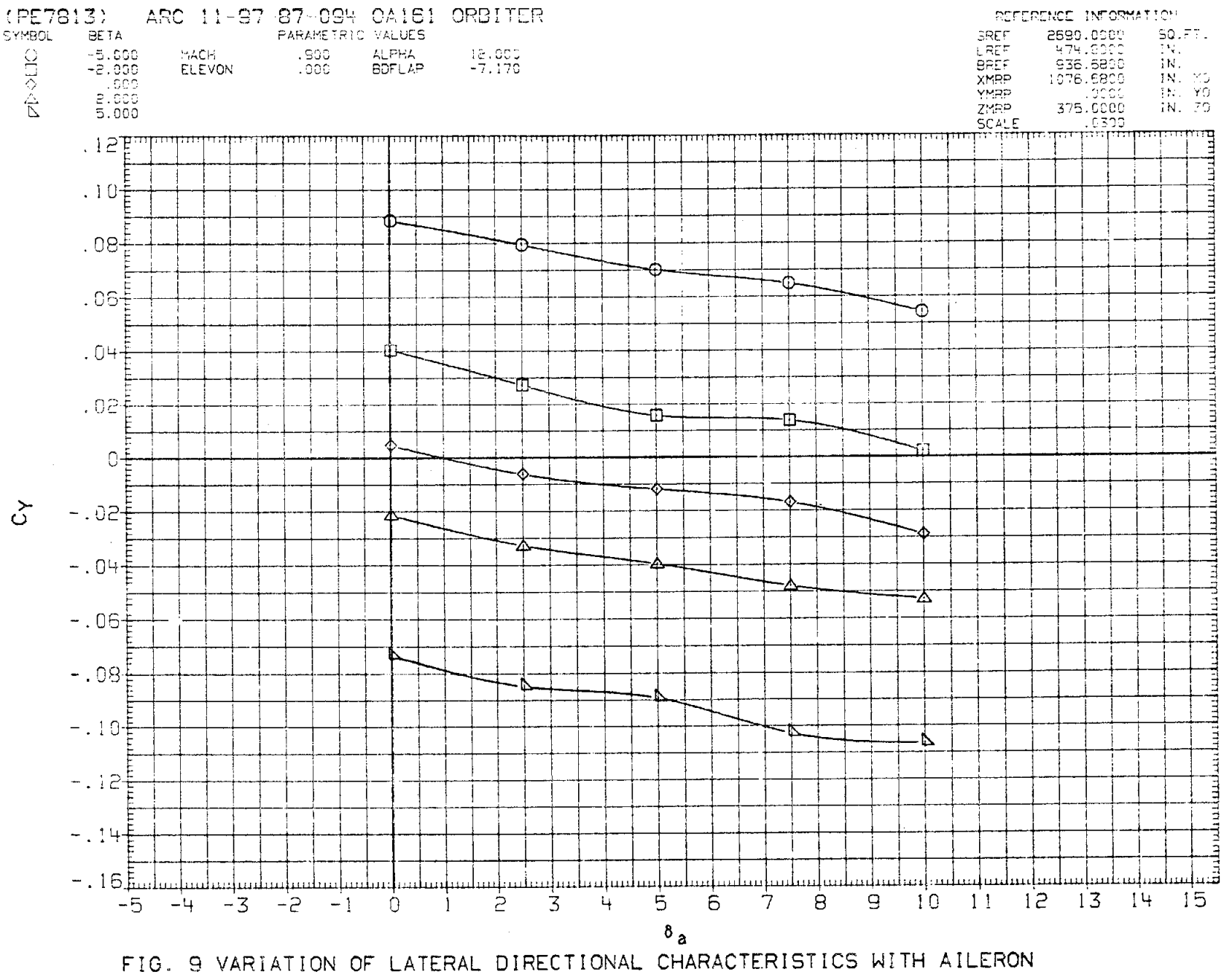


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

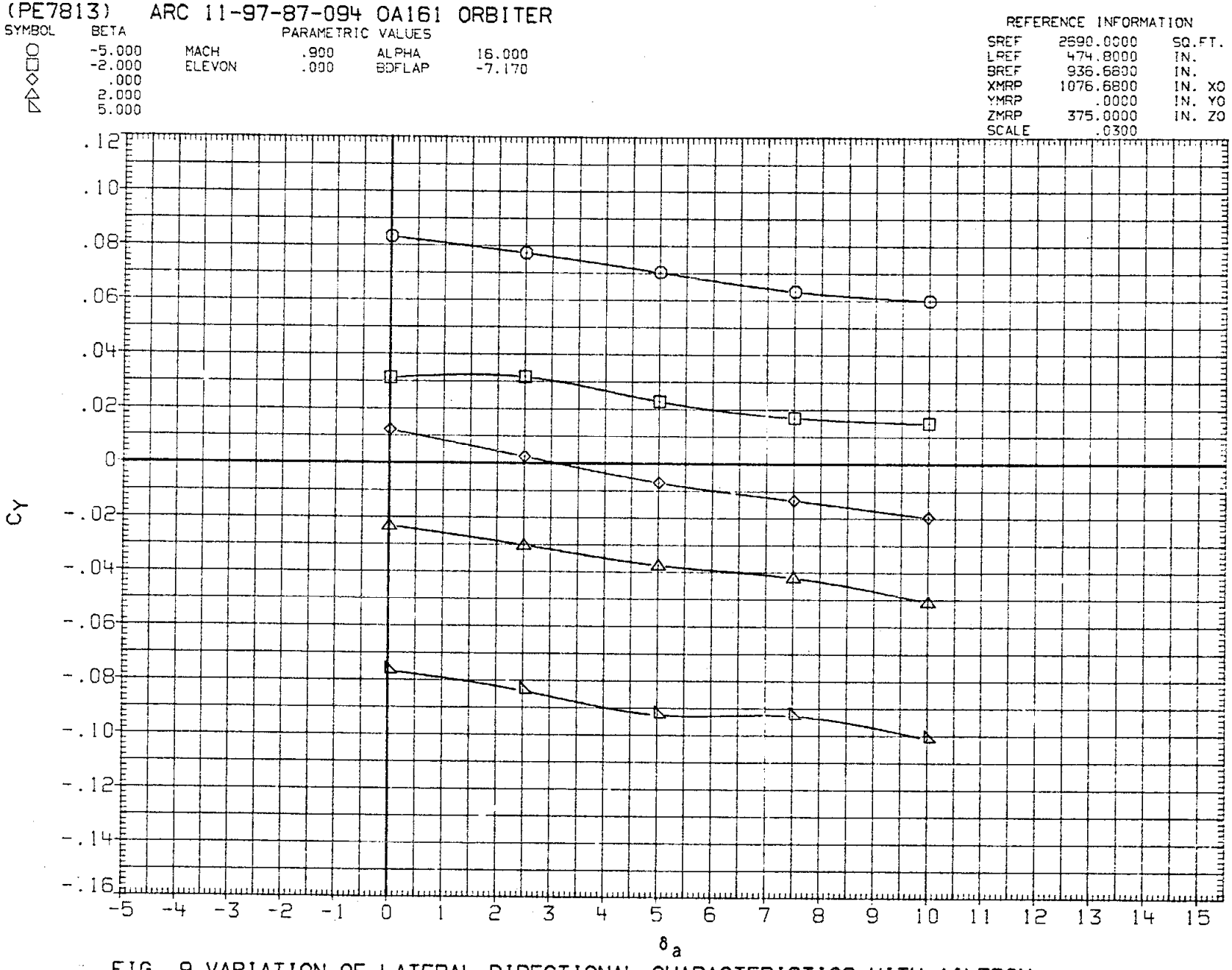


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

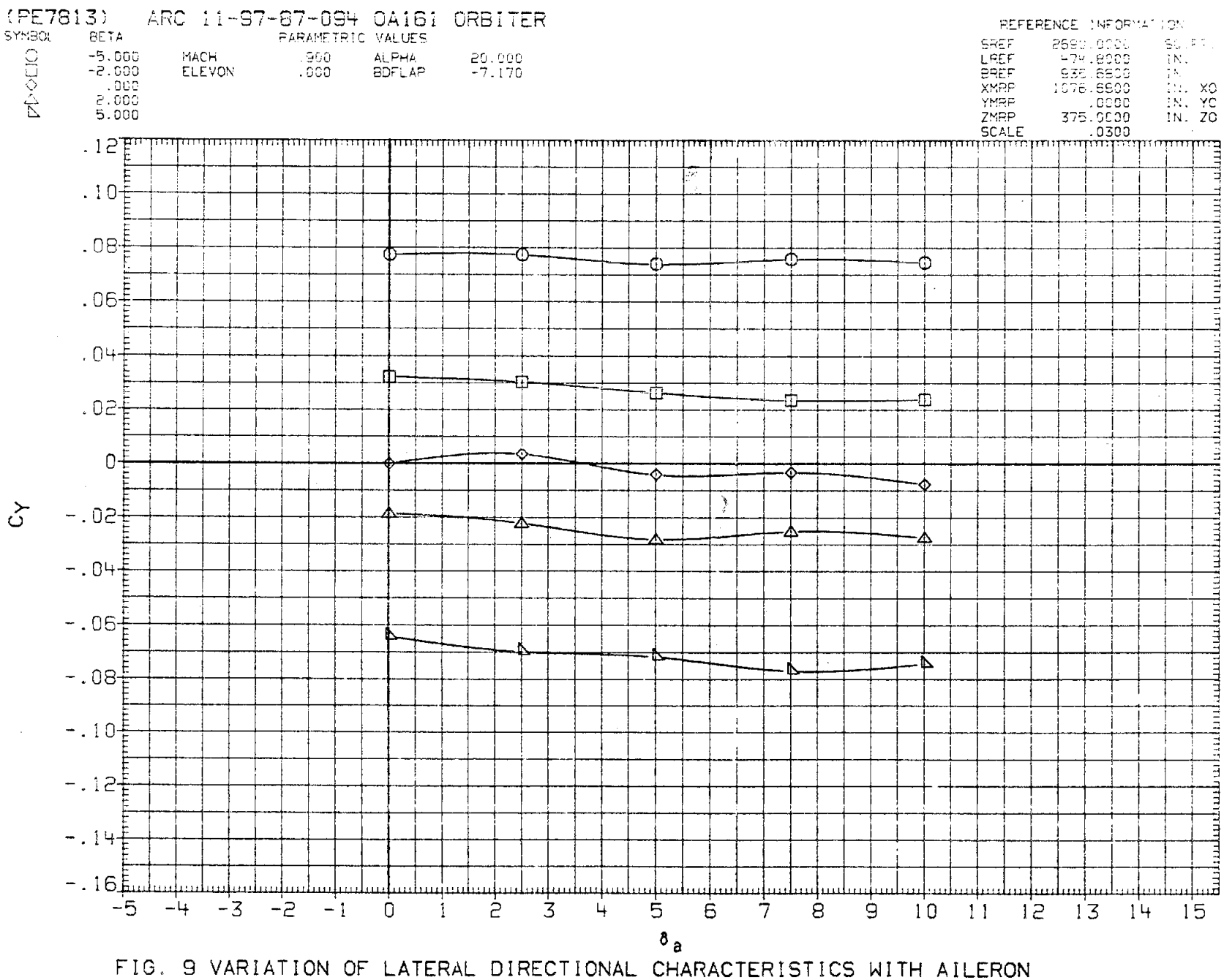


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

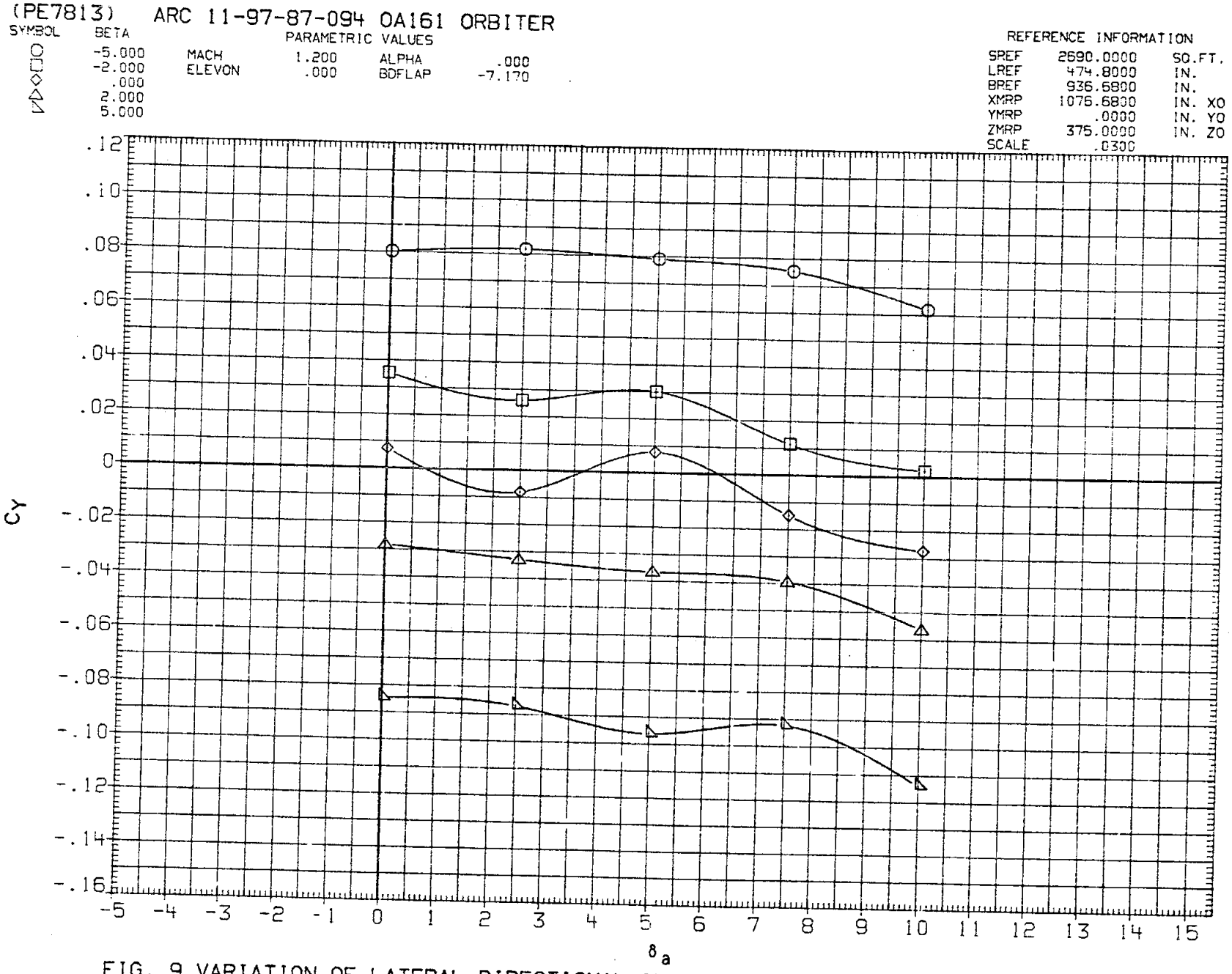


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

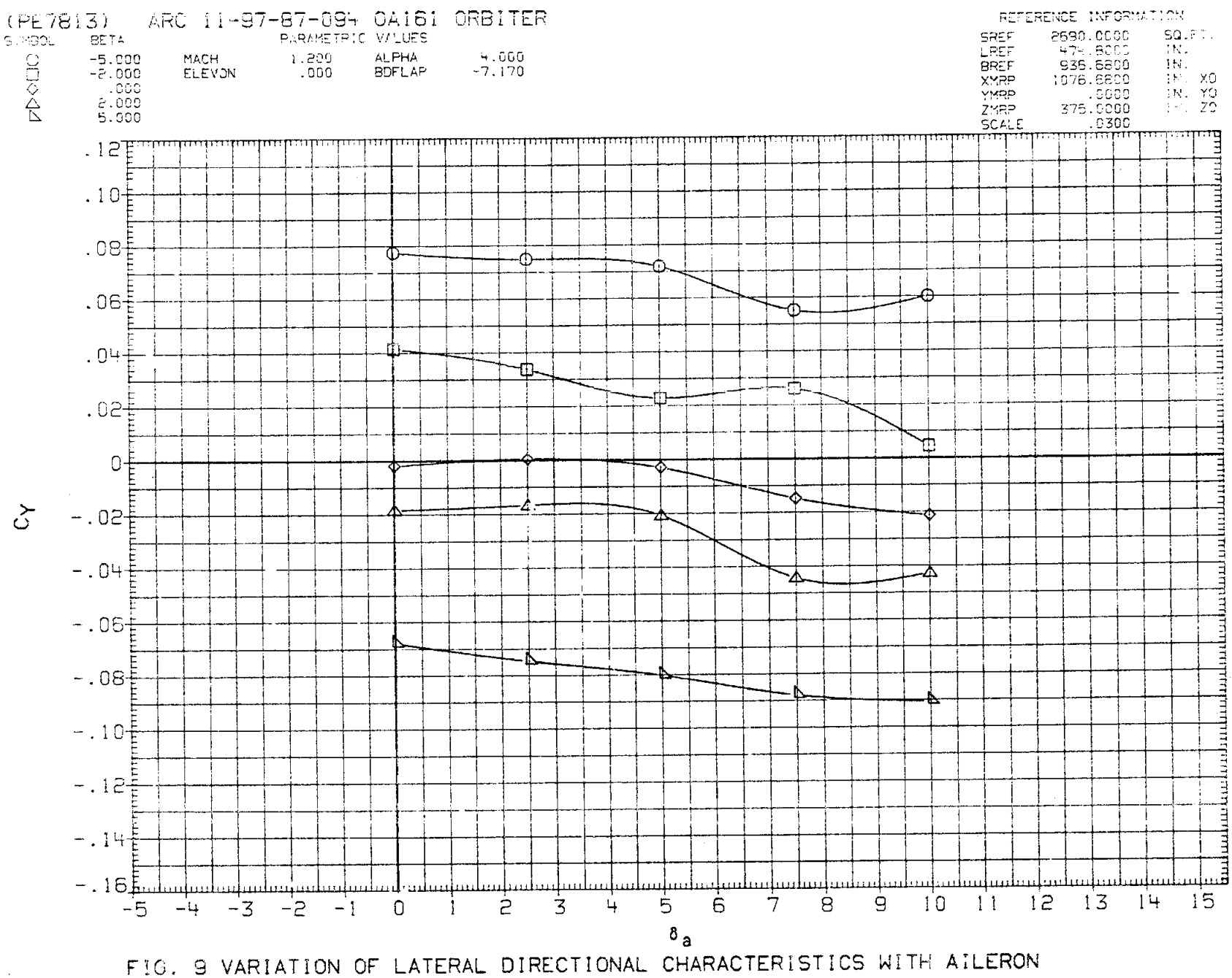


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

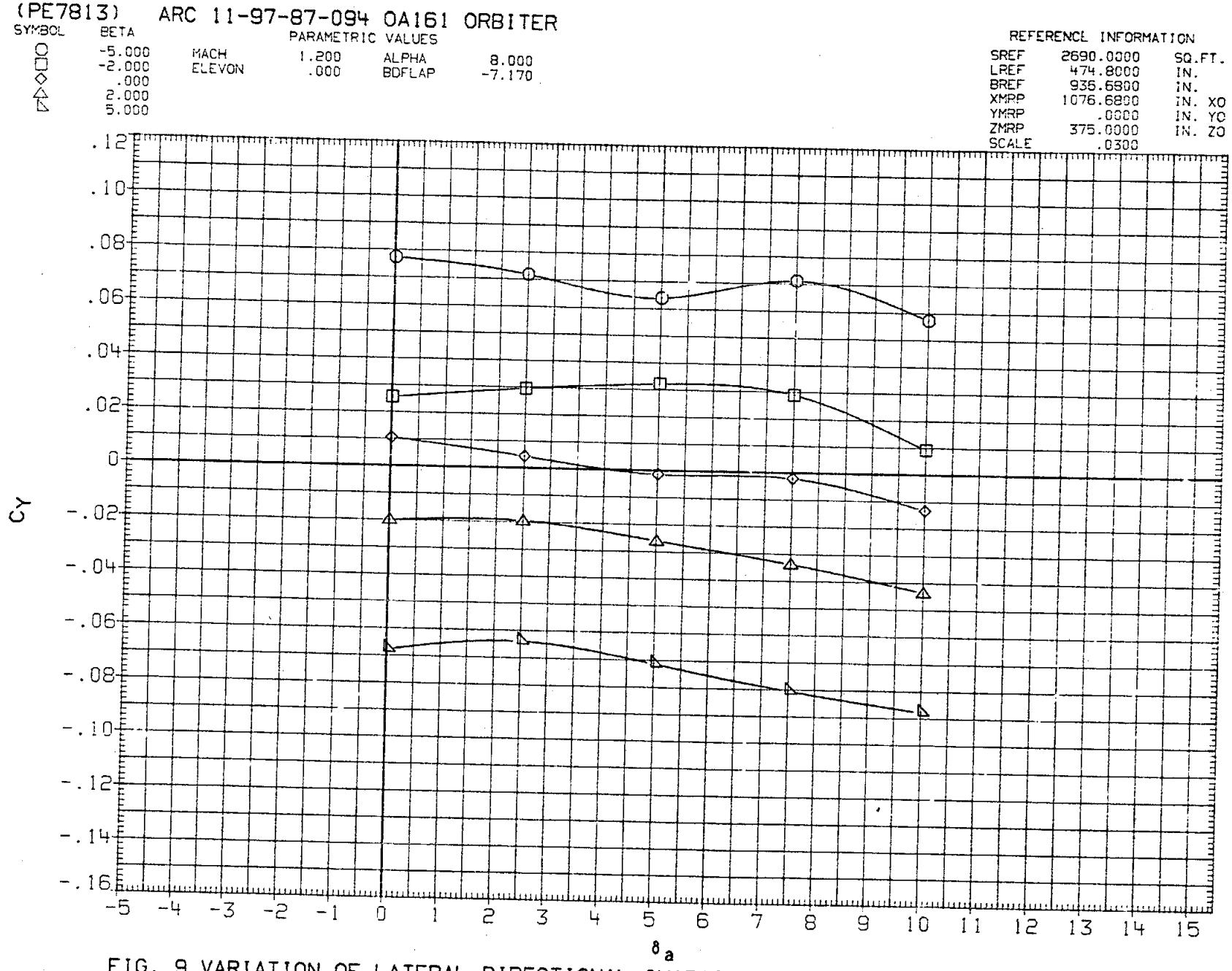
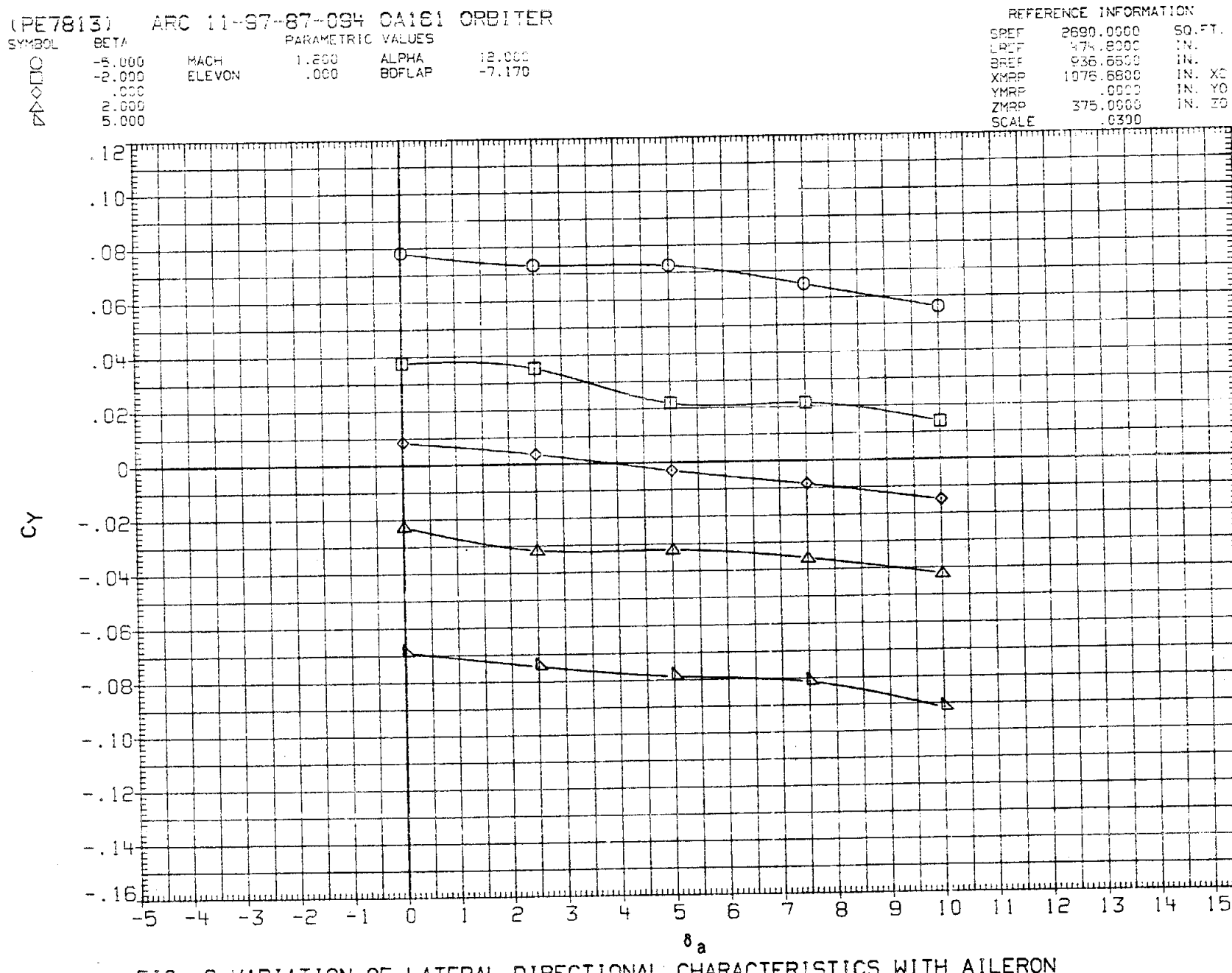


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON



FIC. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

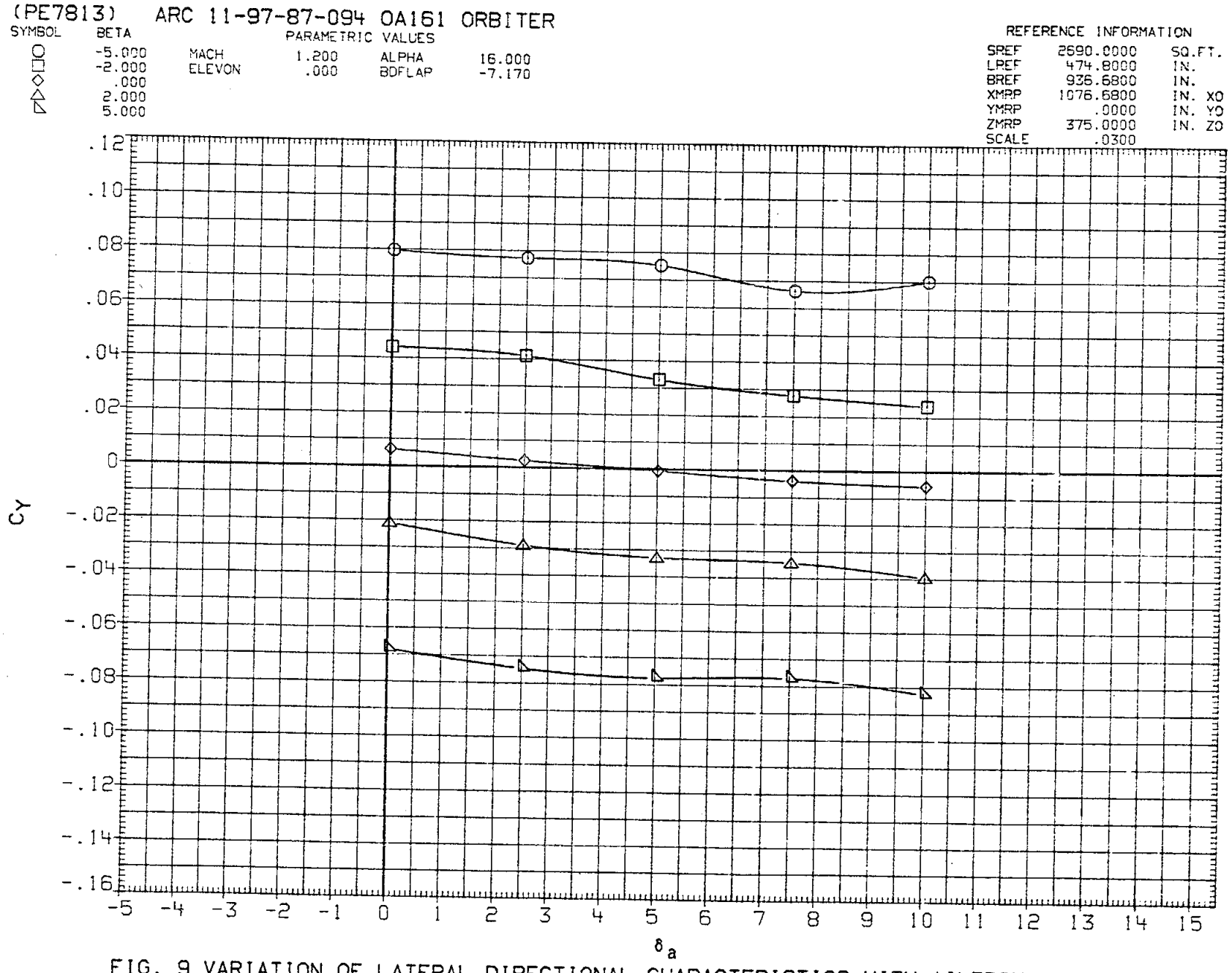


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

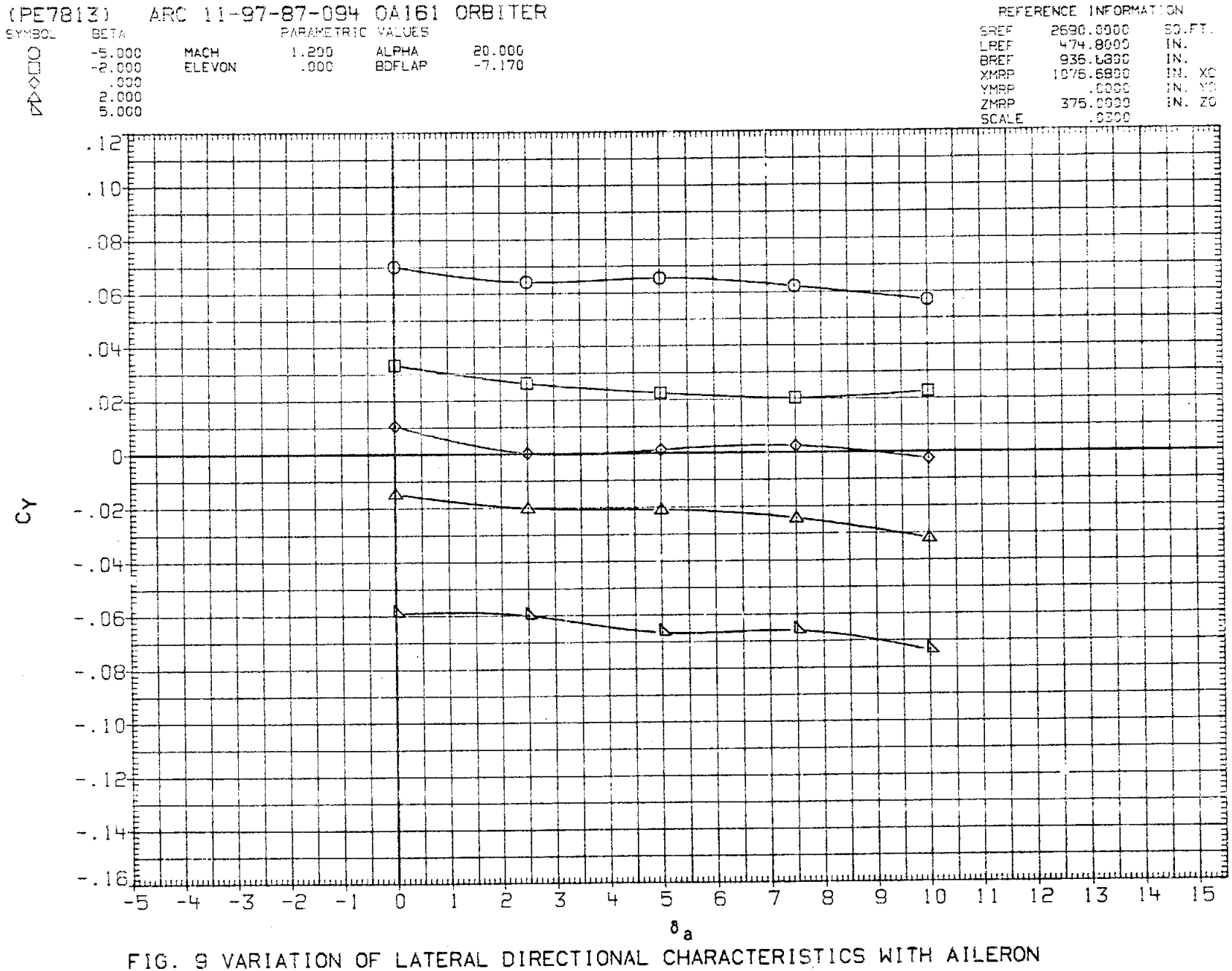


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

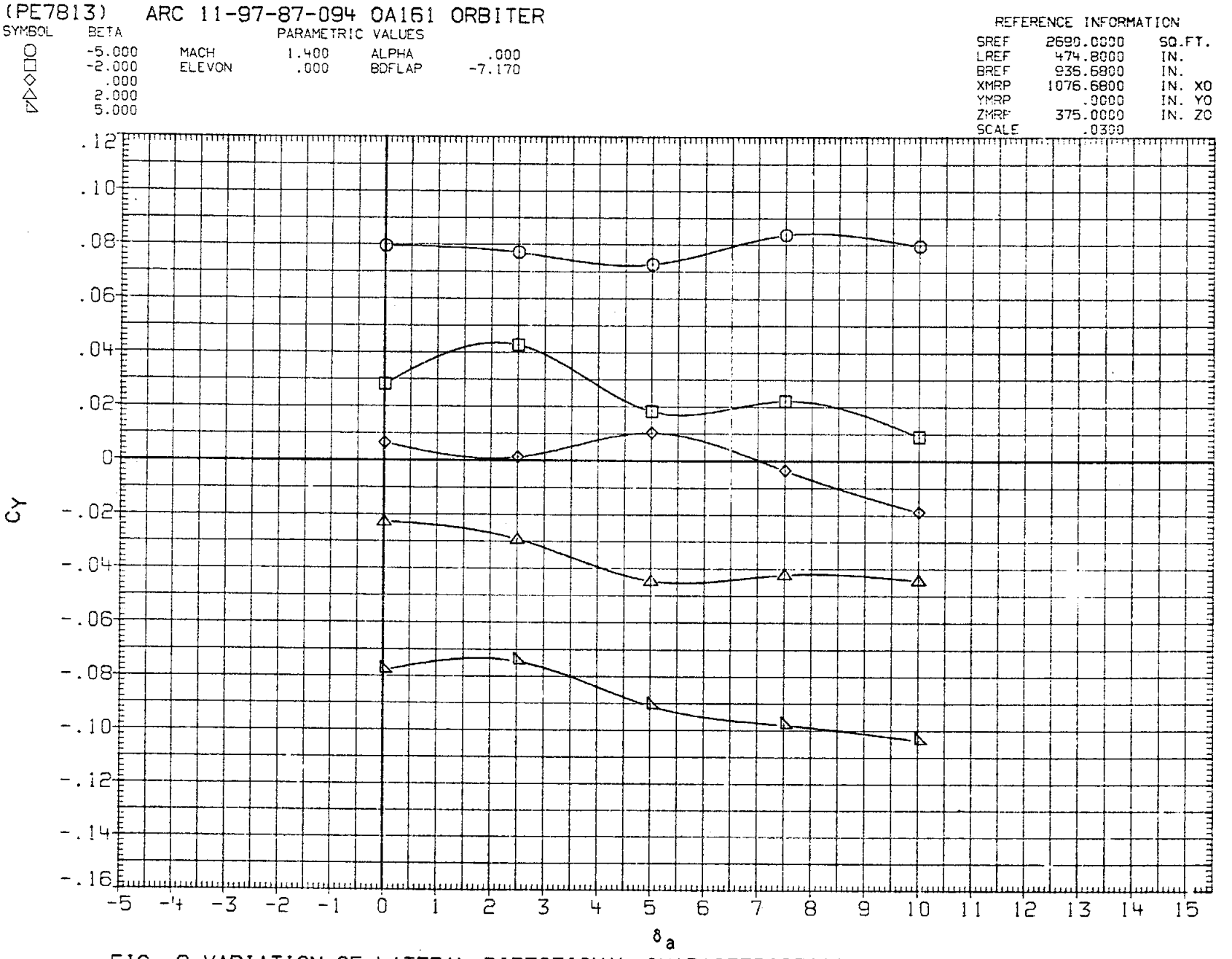


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

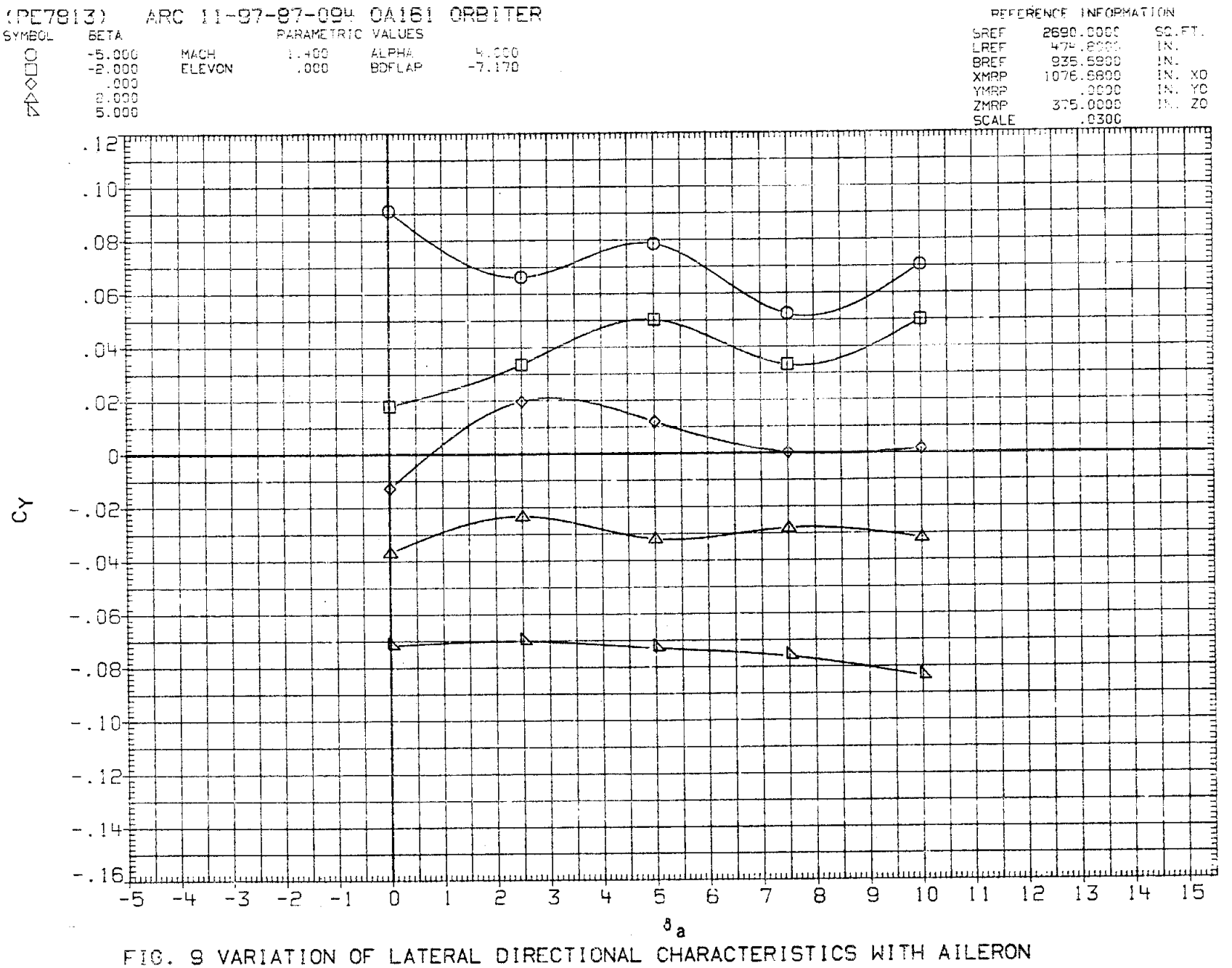


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

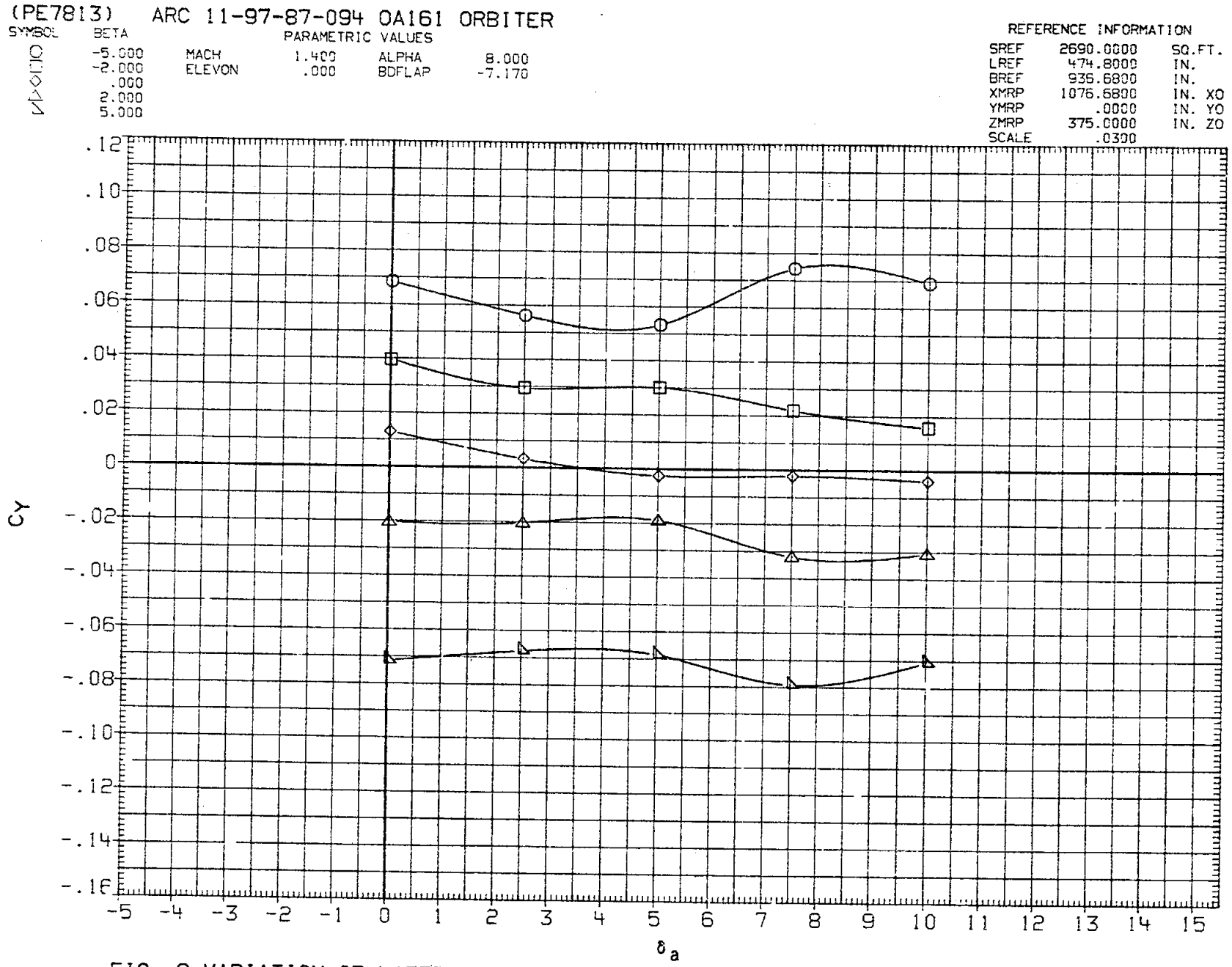


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

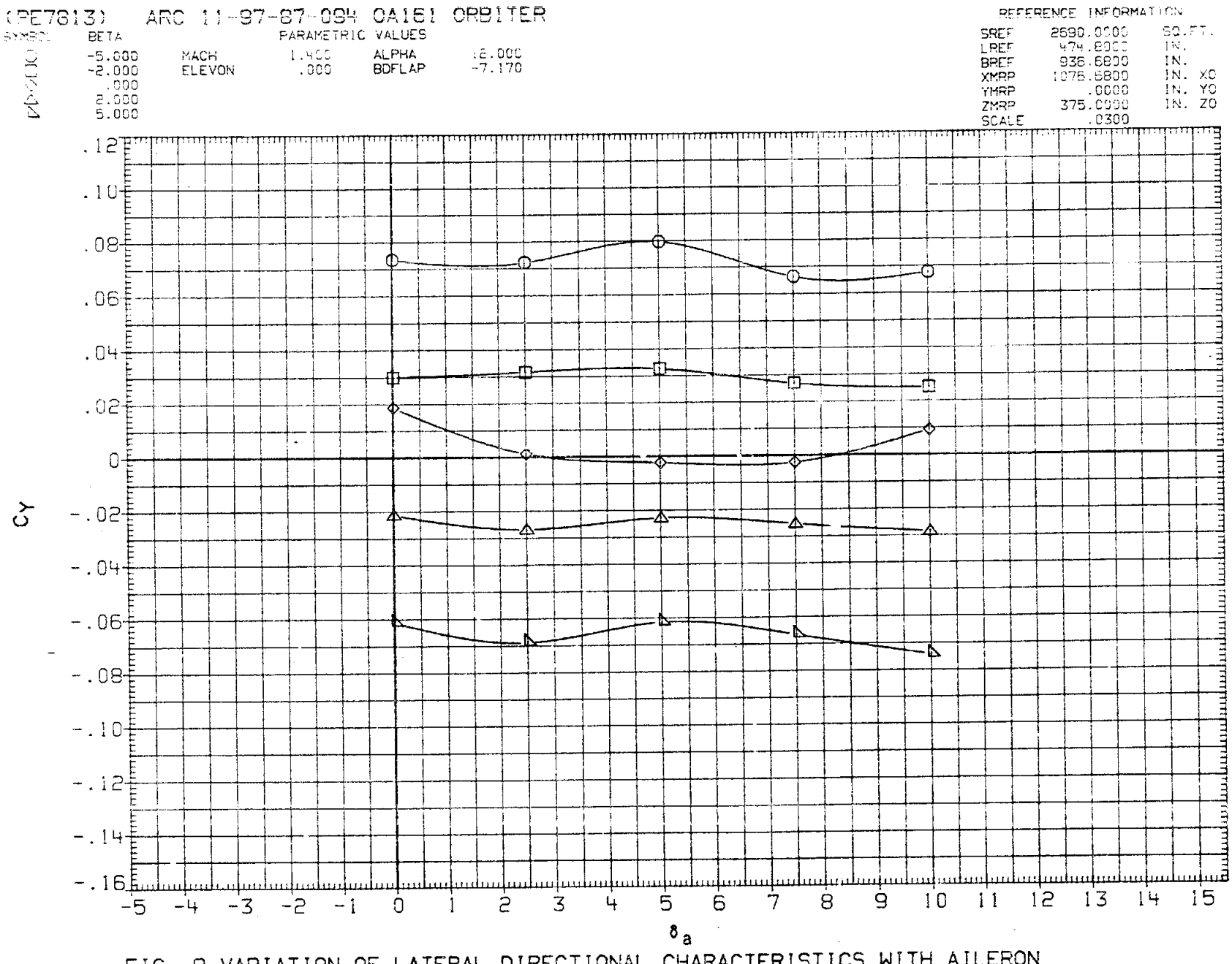


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

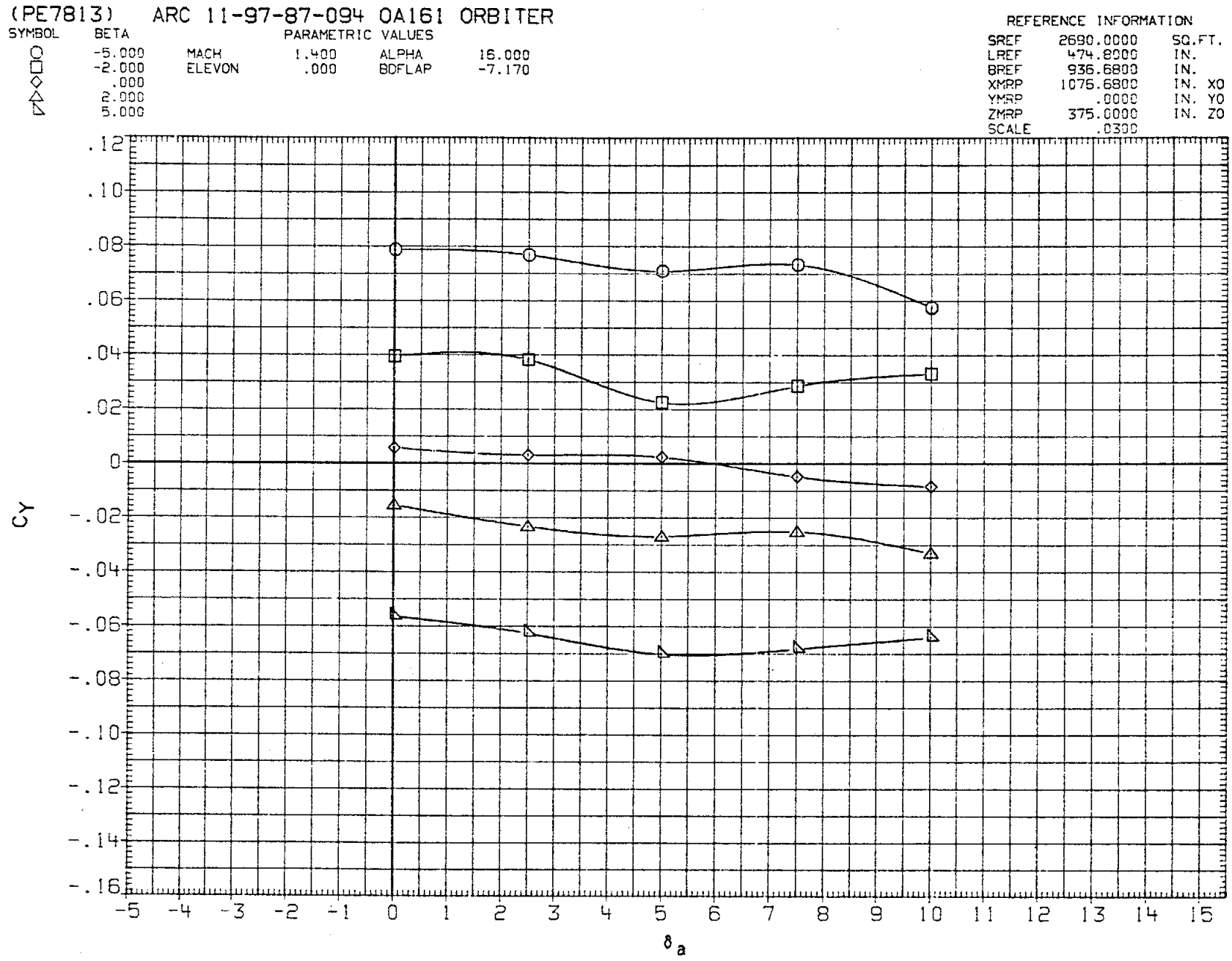


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

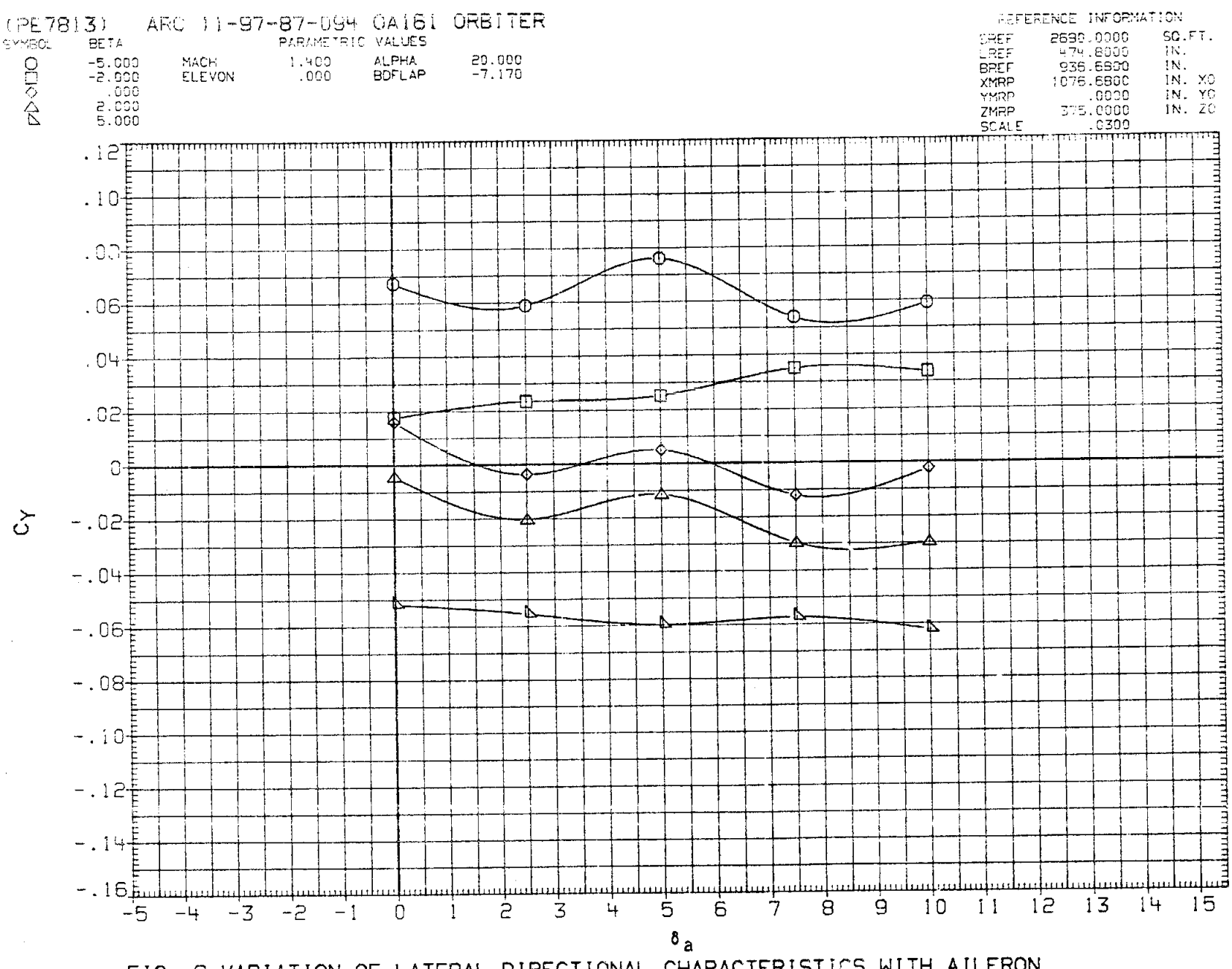


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

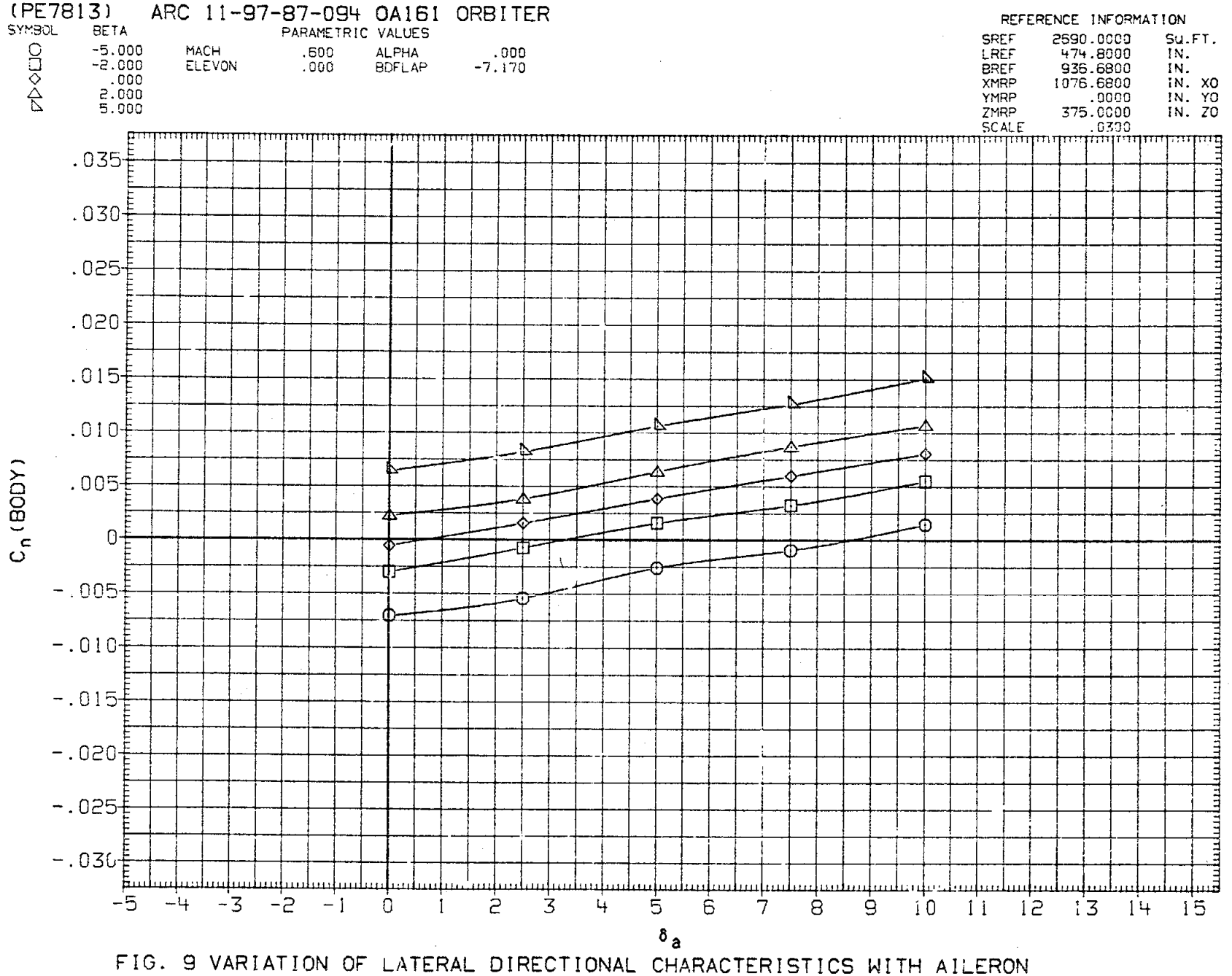


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

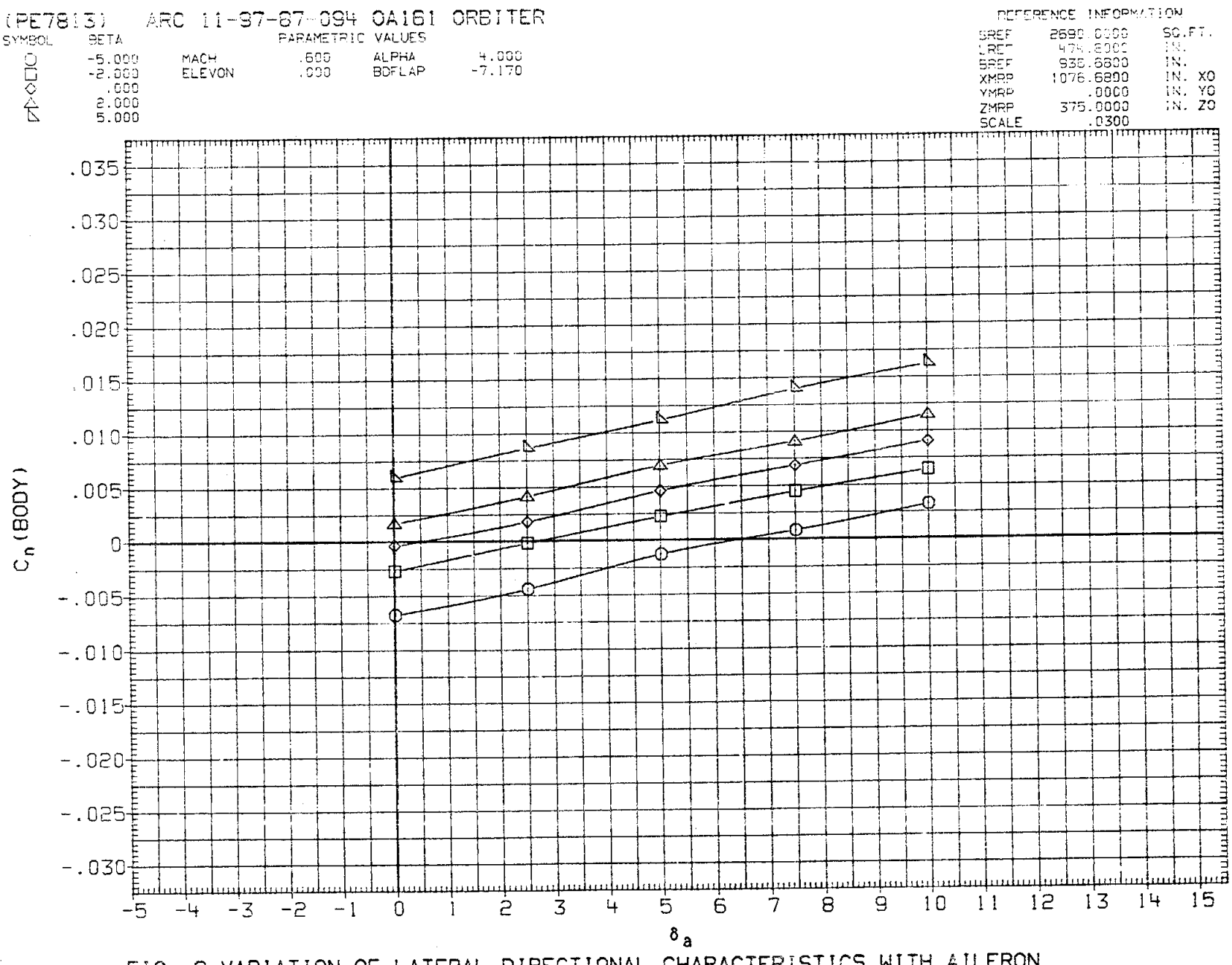


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

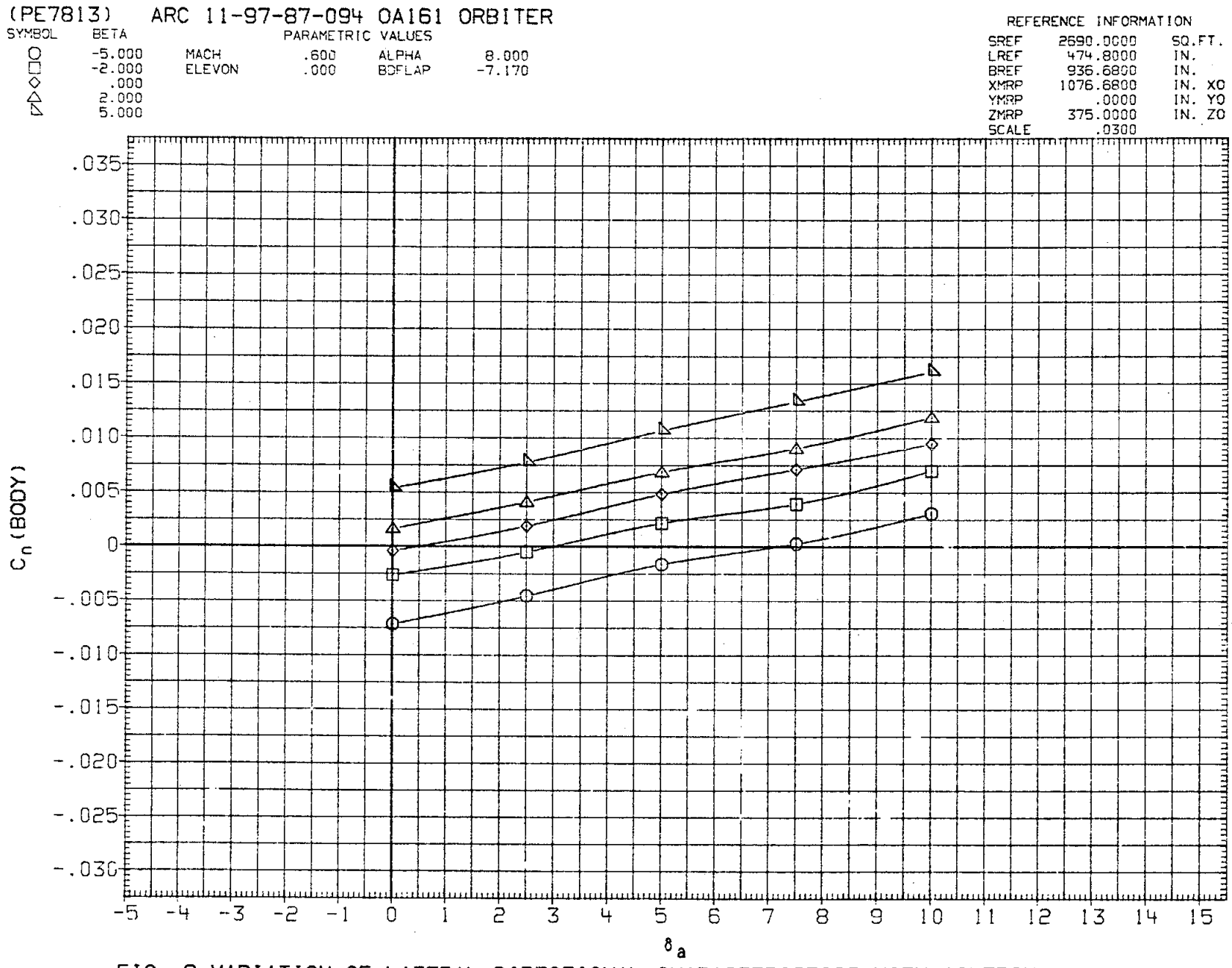


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

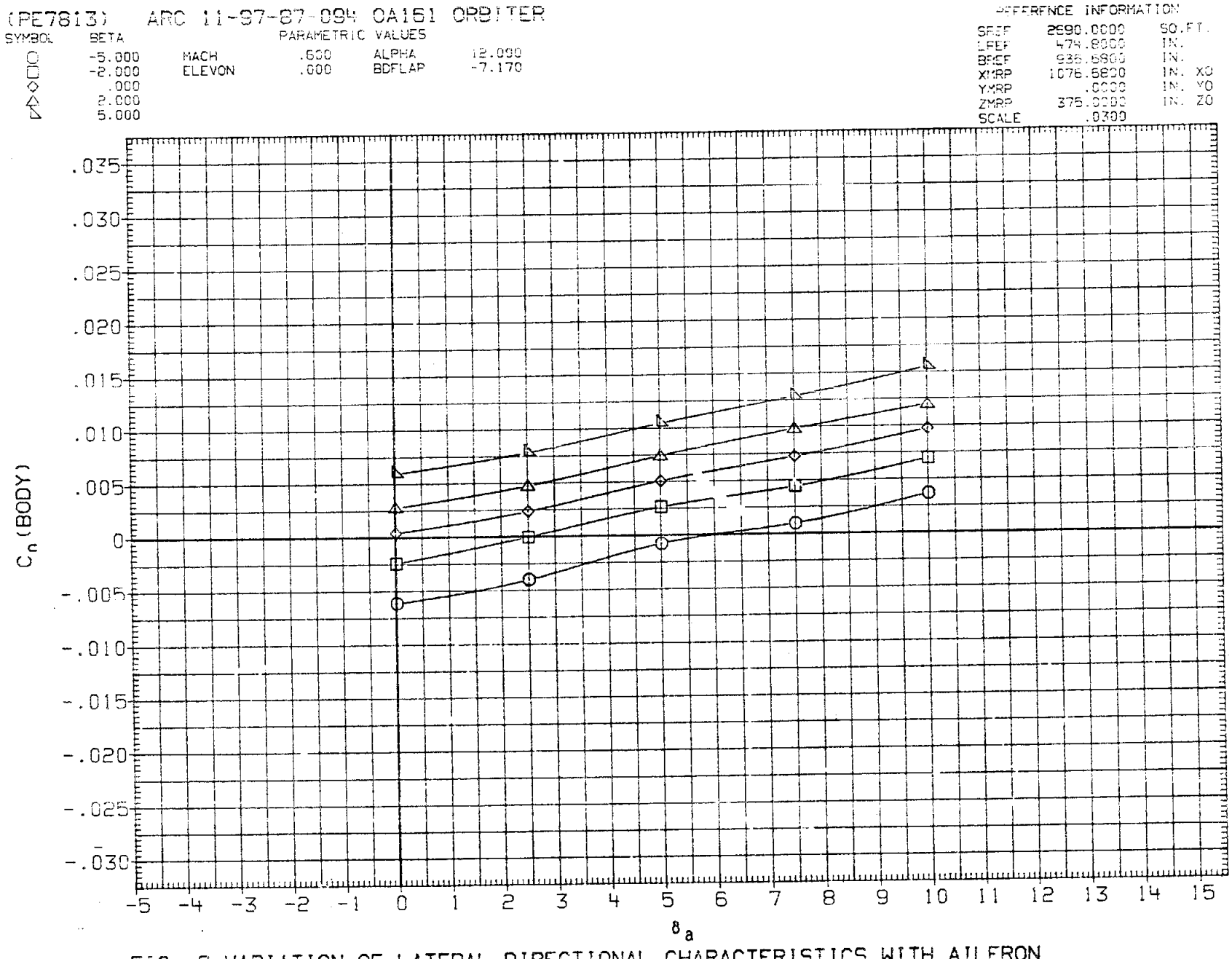


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

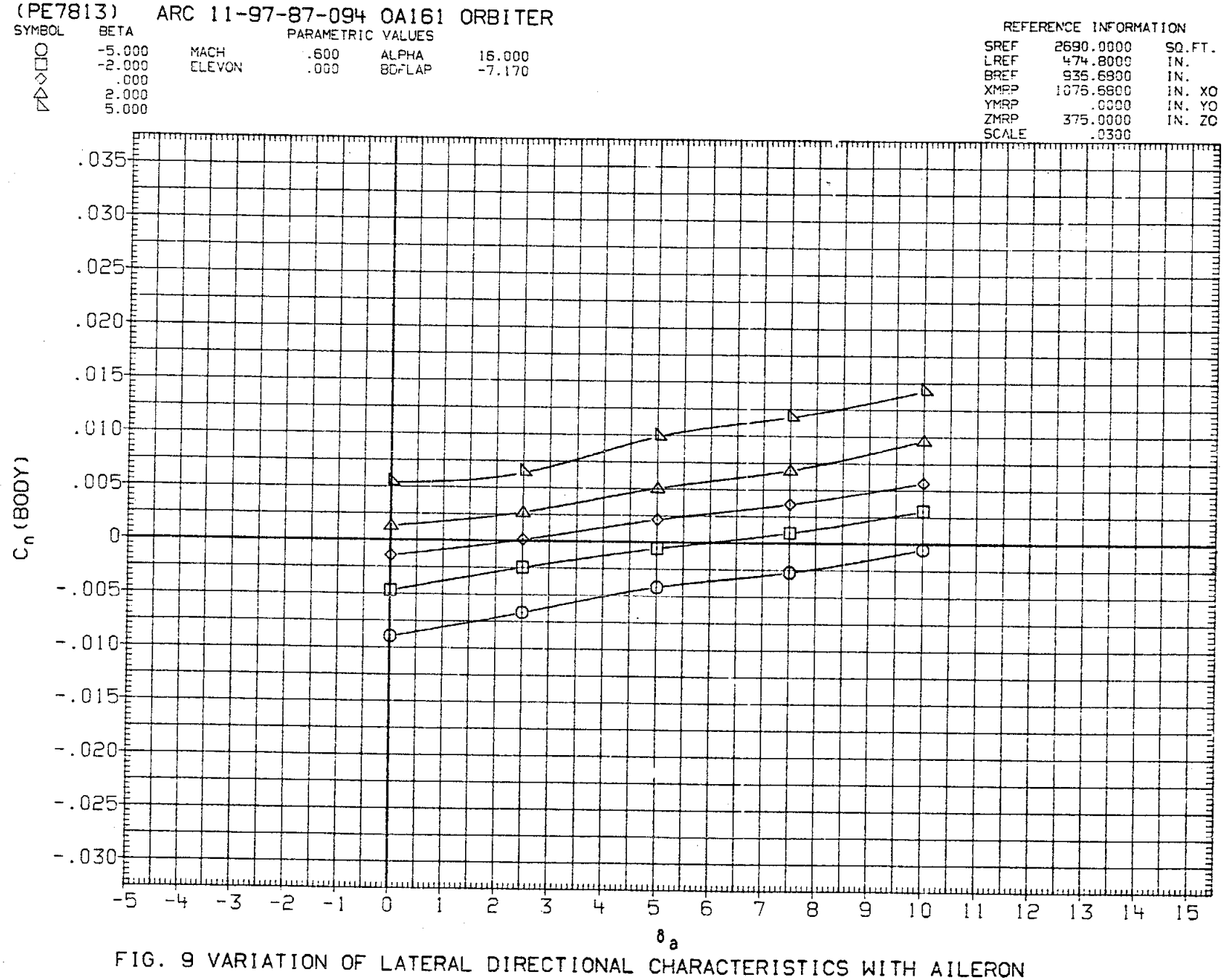


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

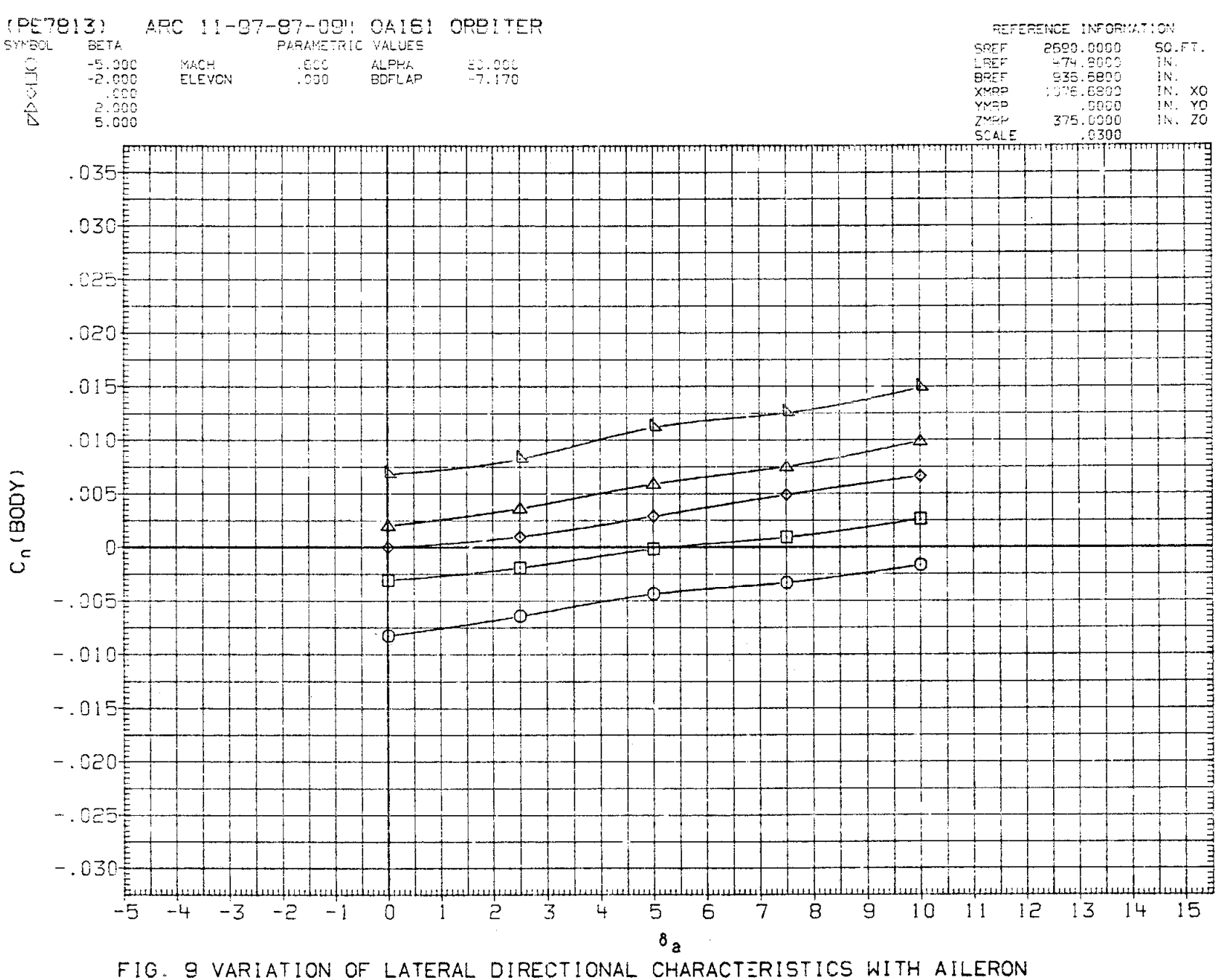


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

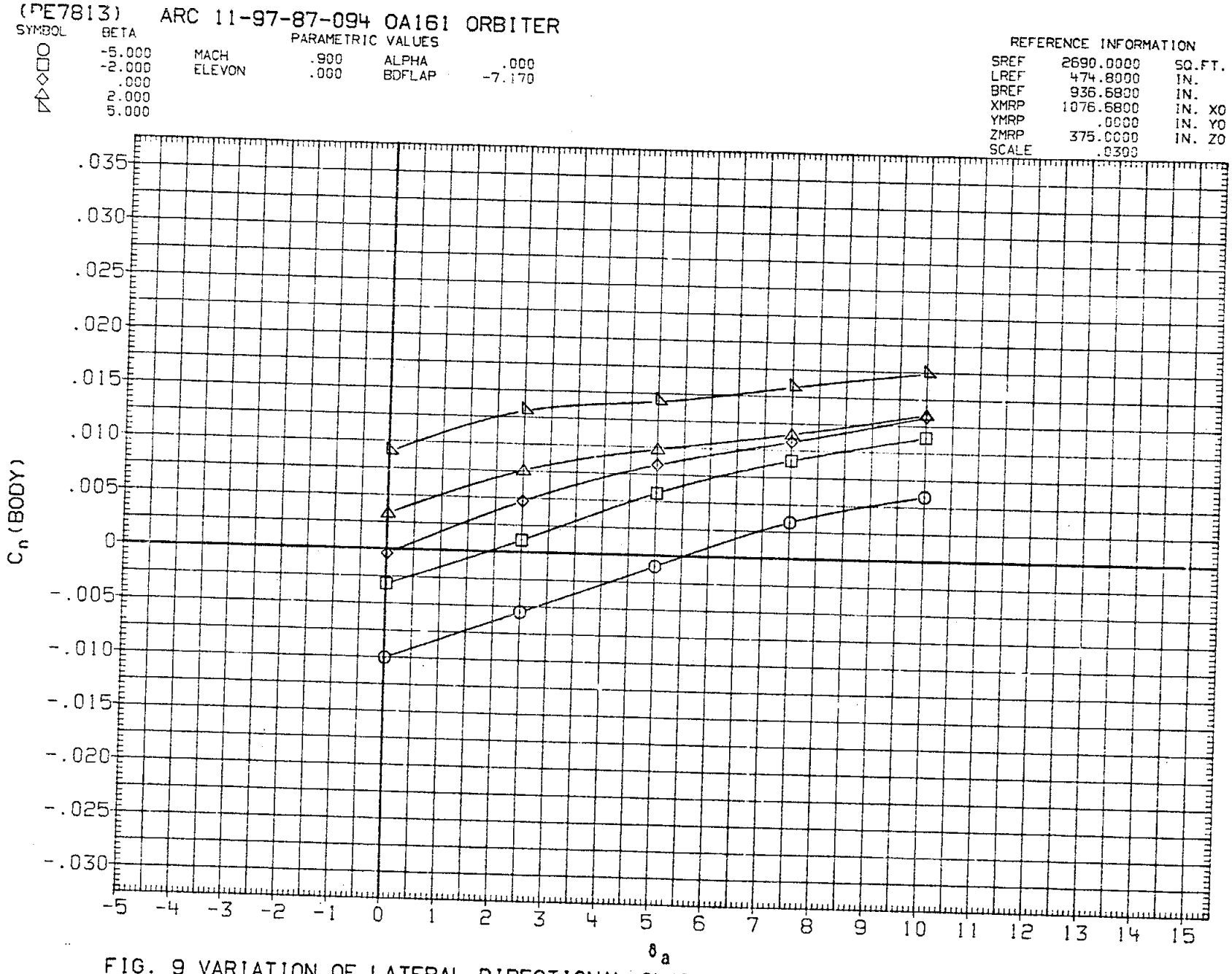


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

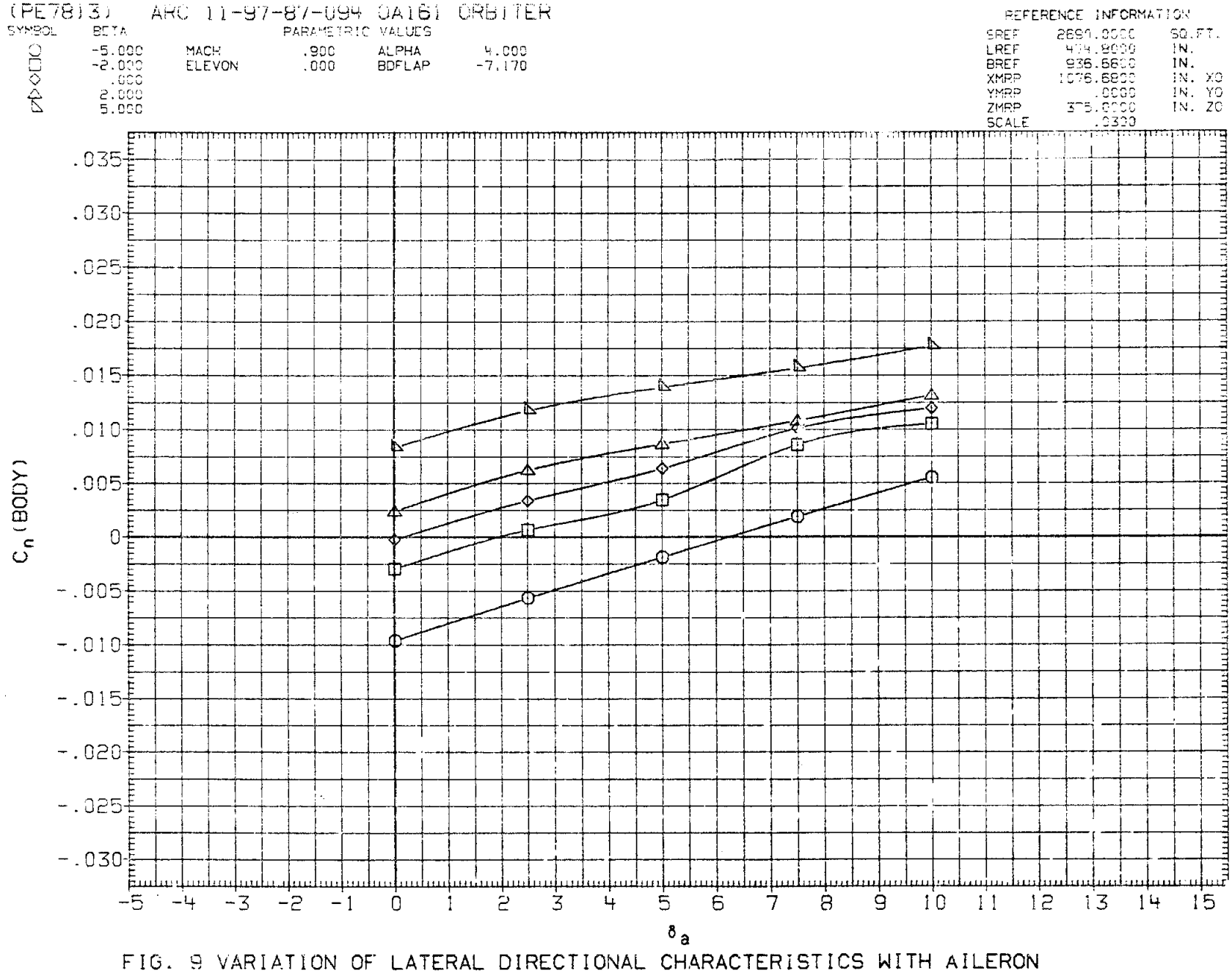


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

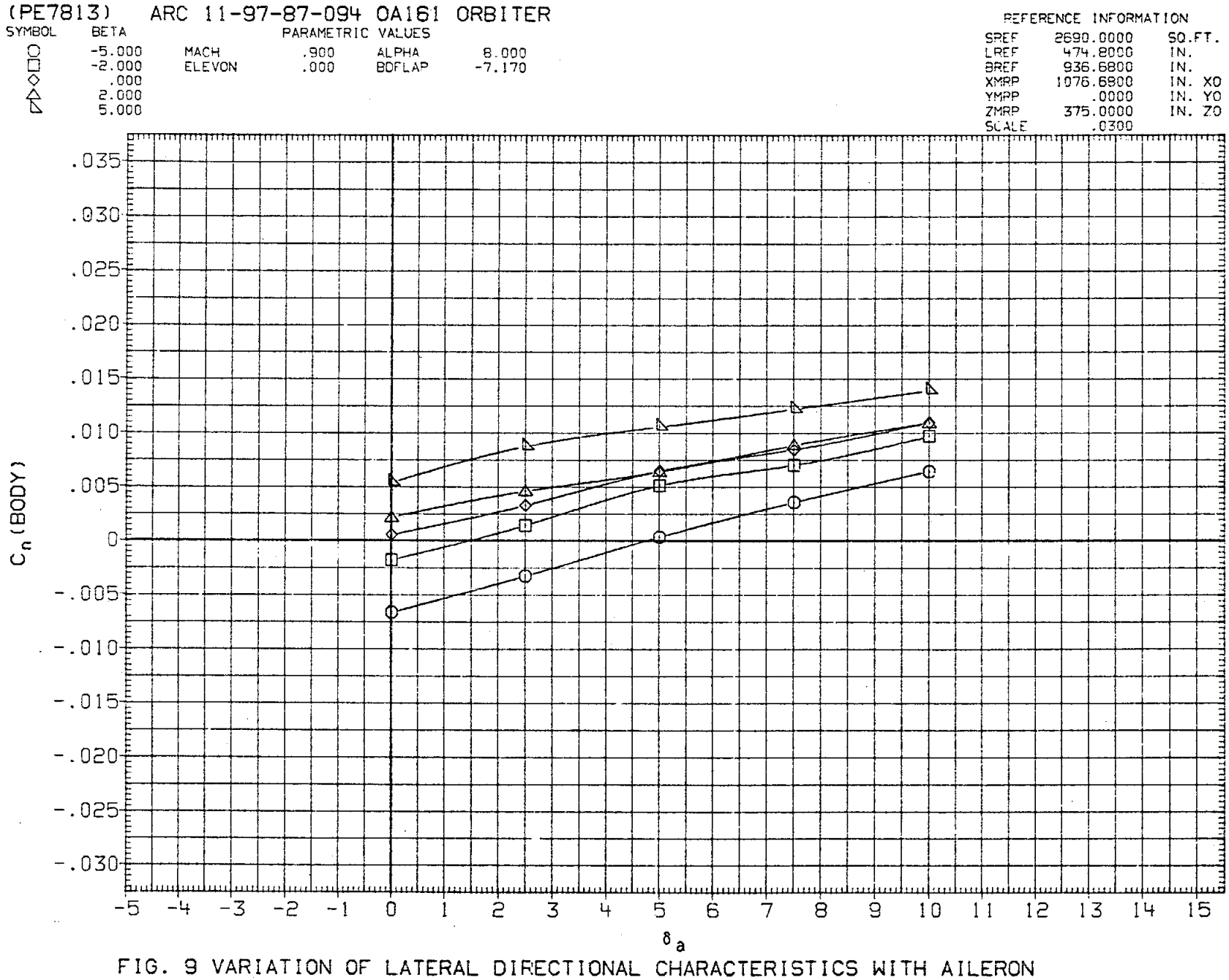


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

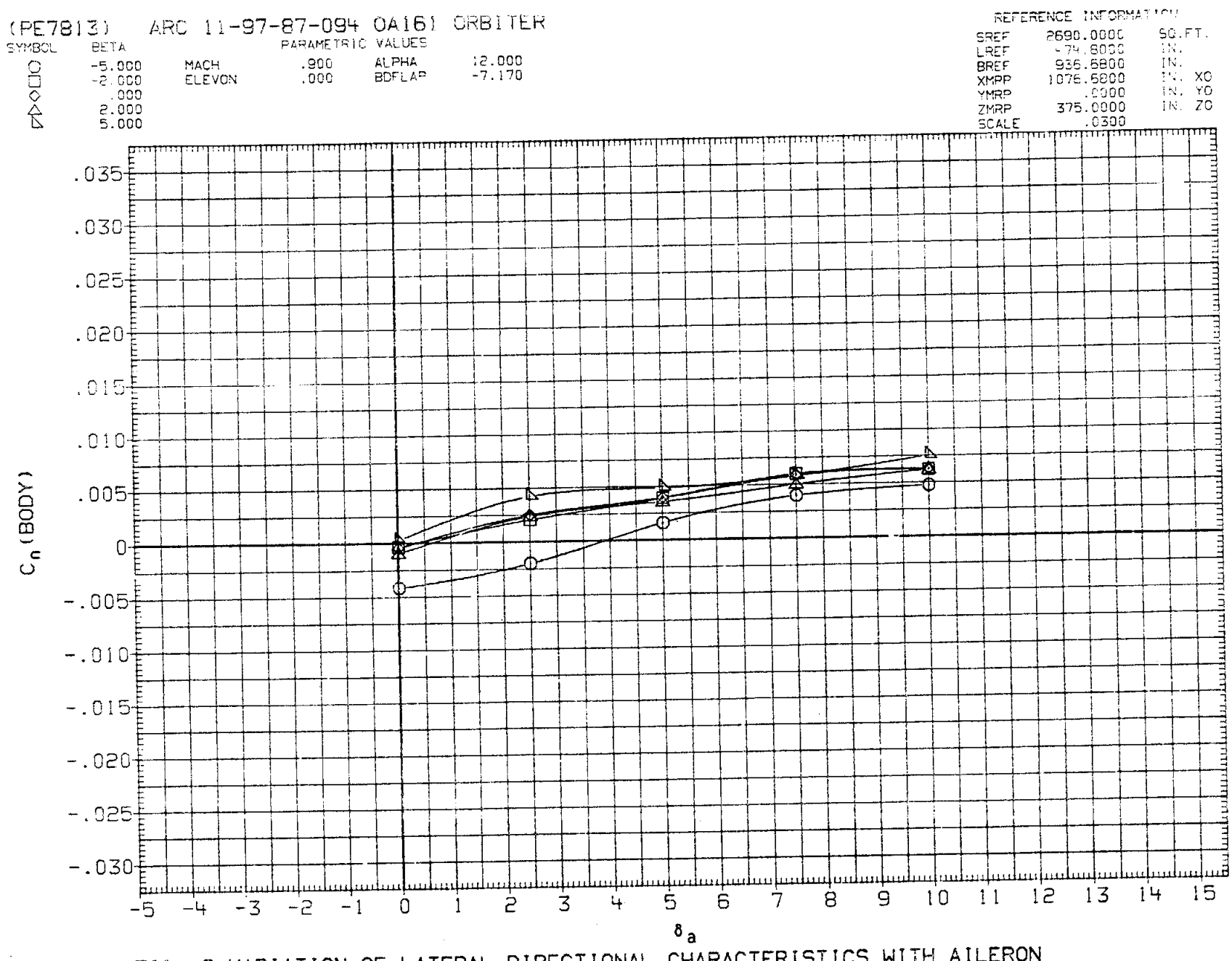


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

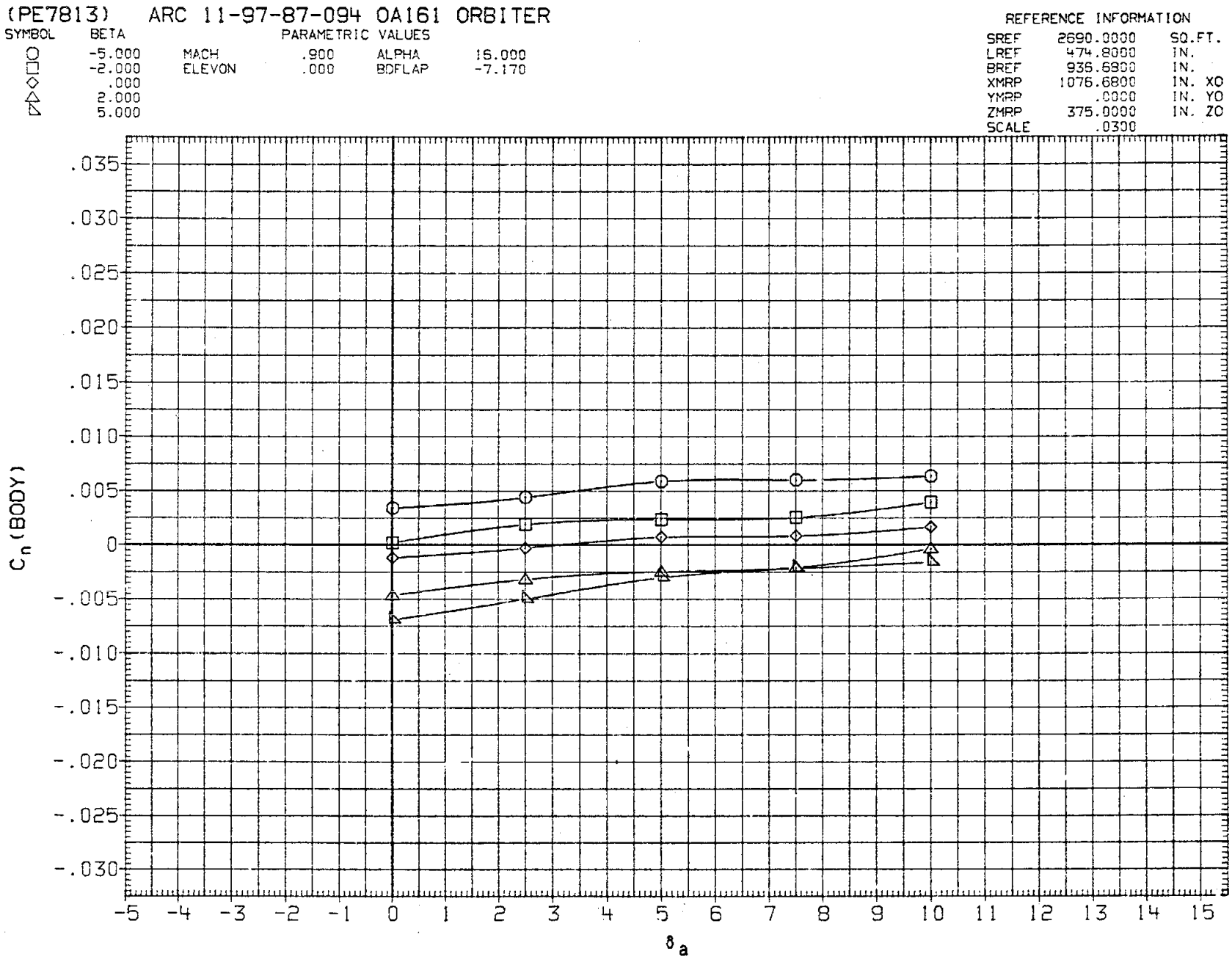


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

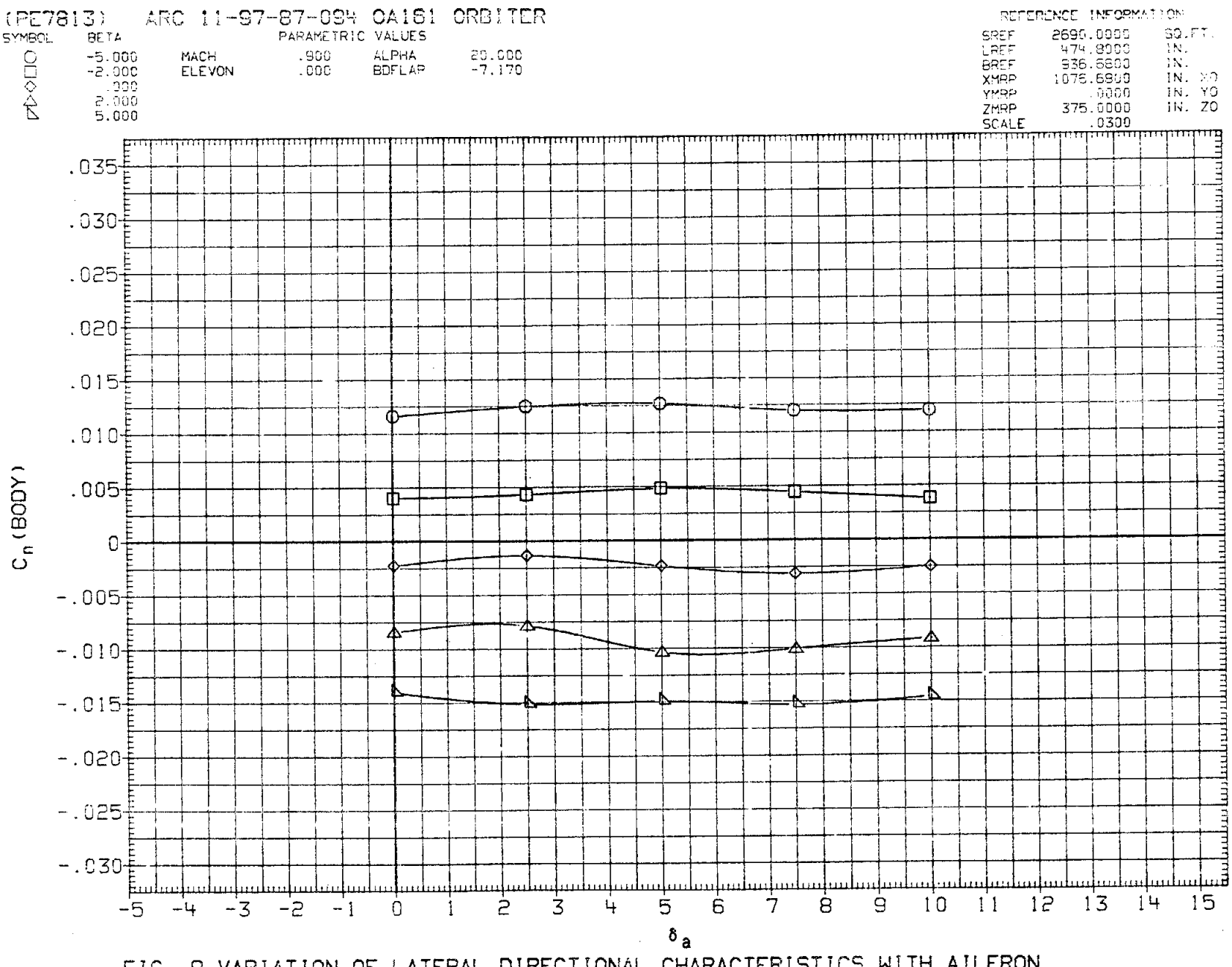


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

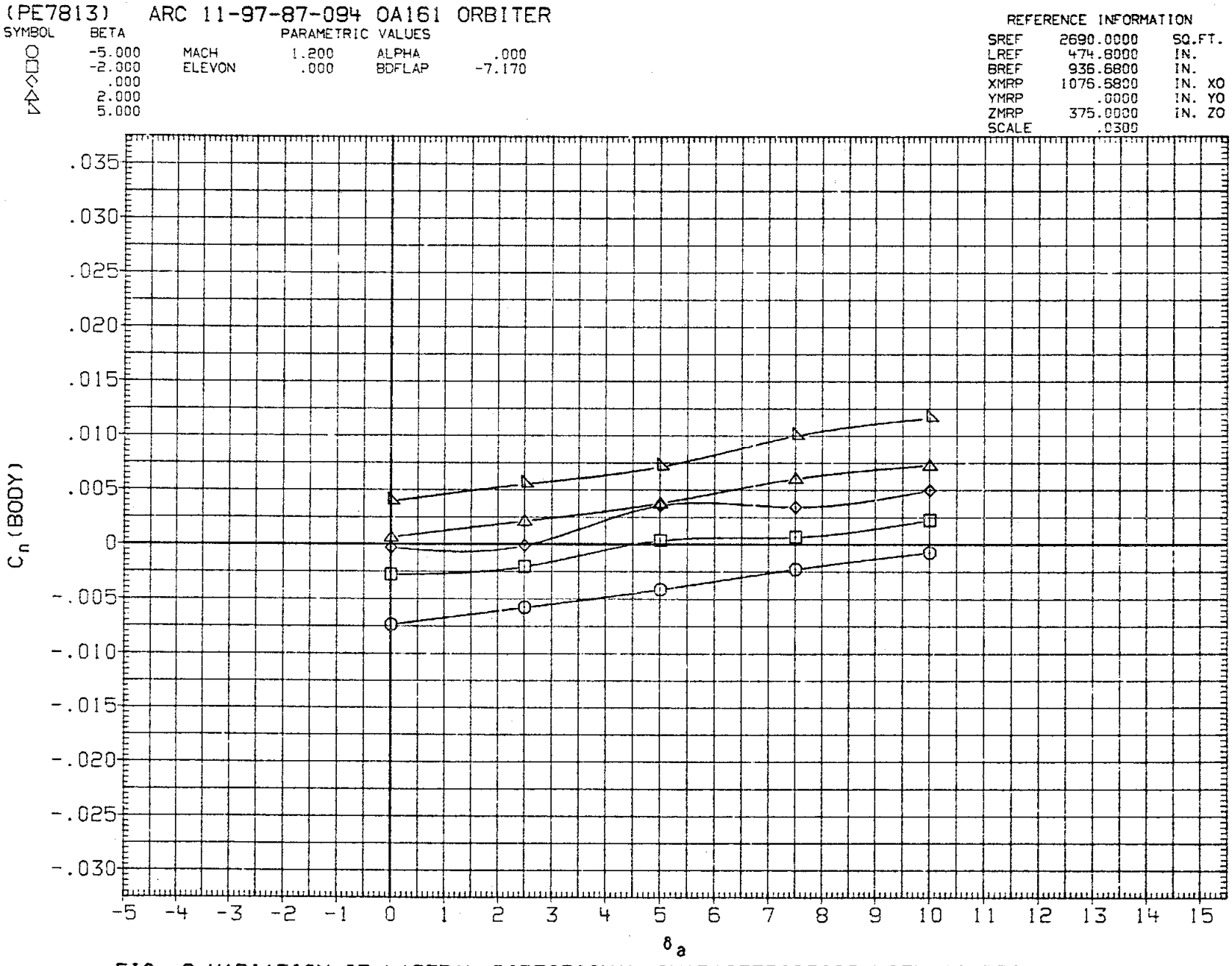


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

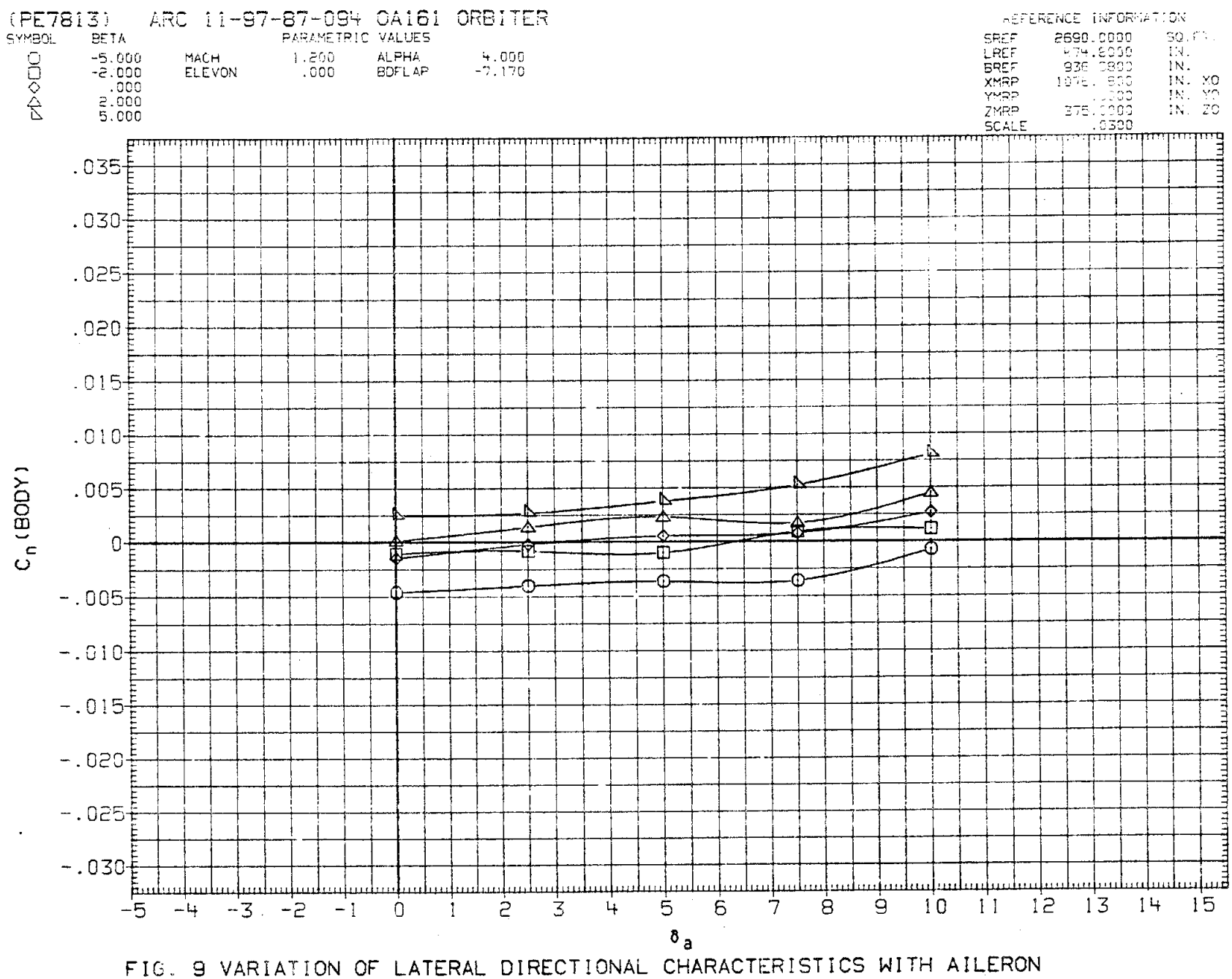


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

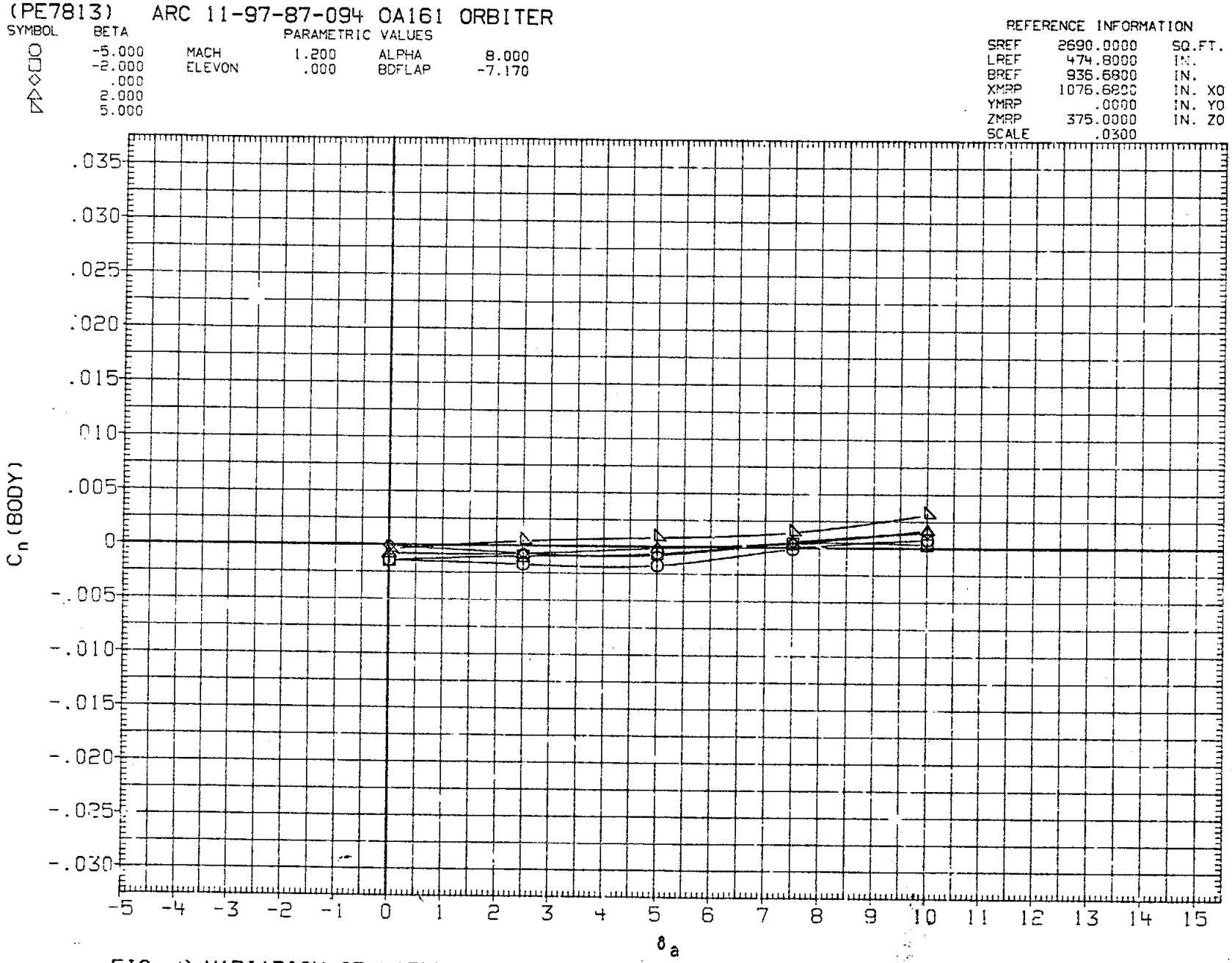


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

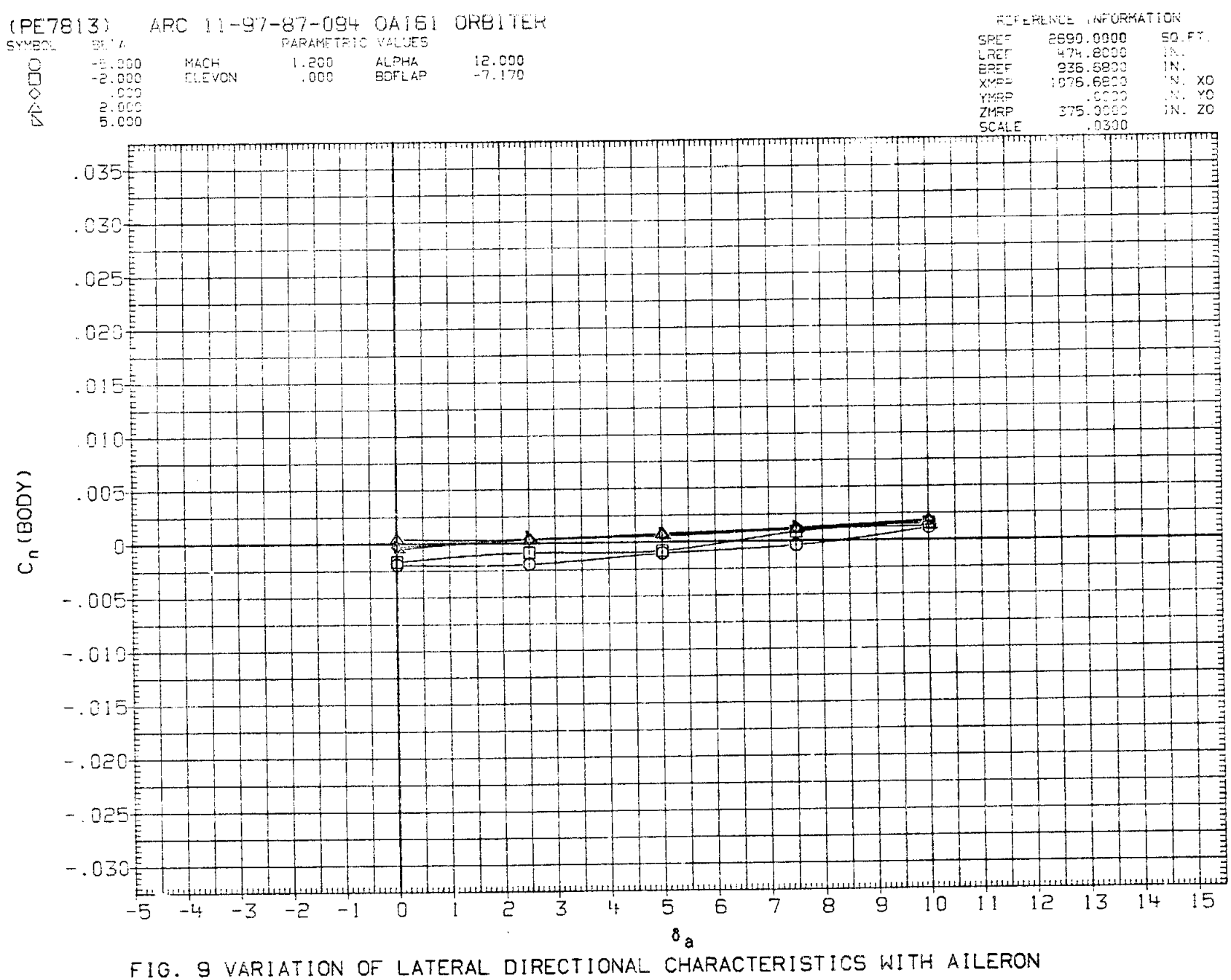


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

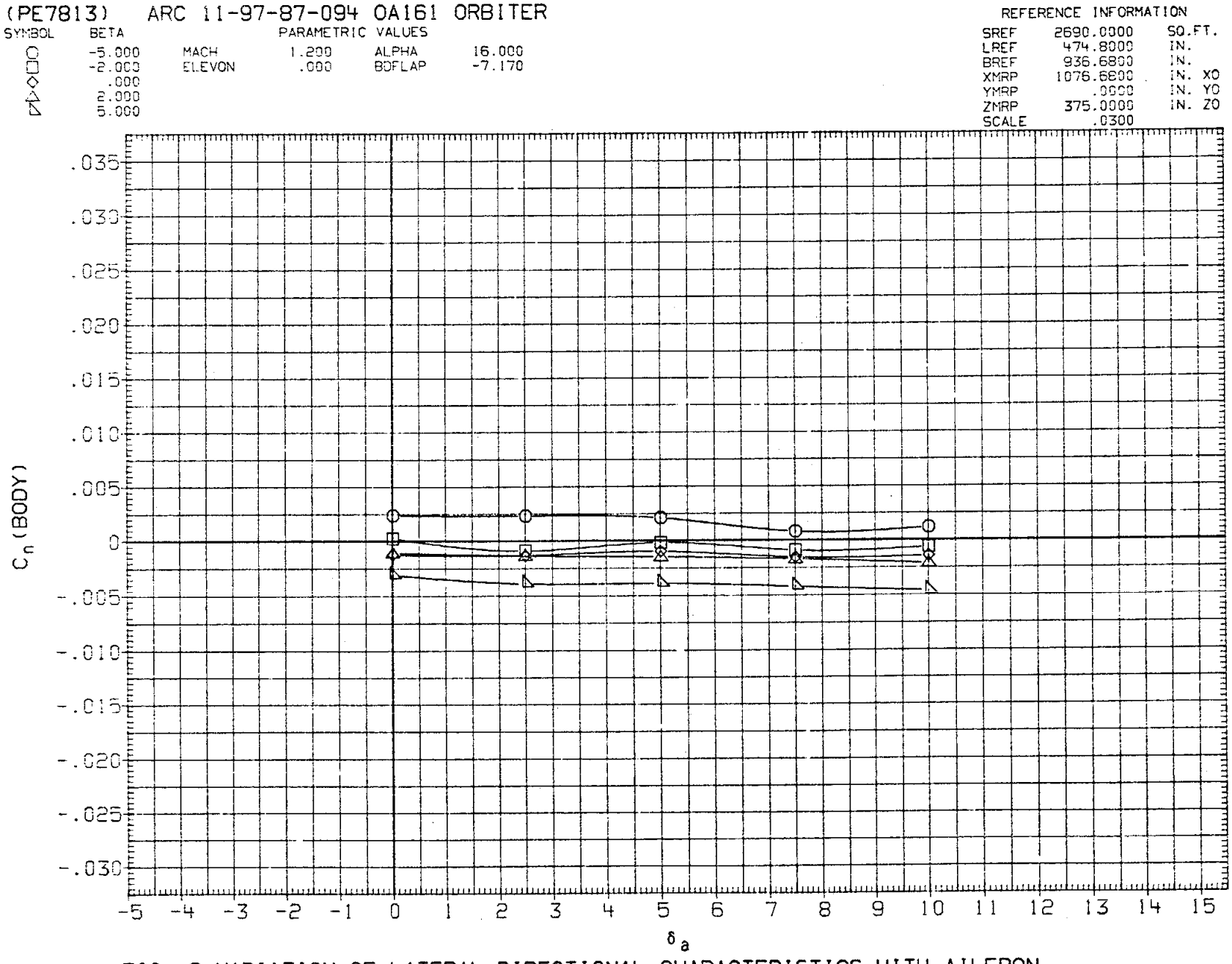


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

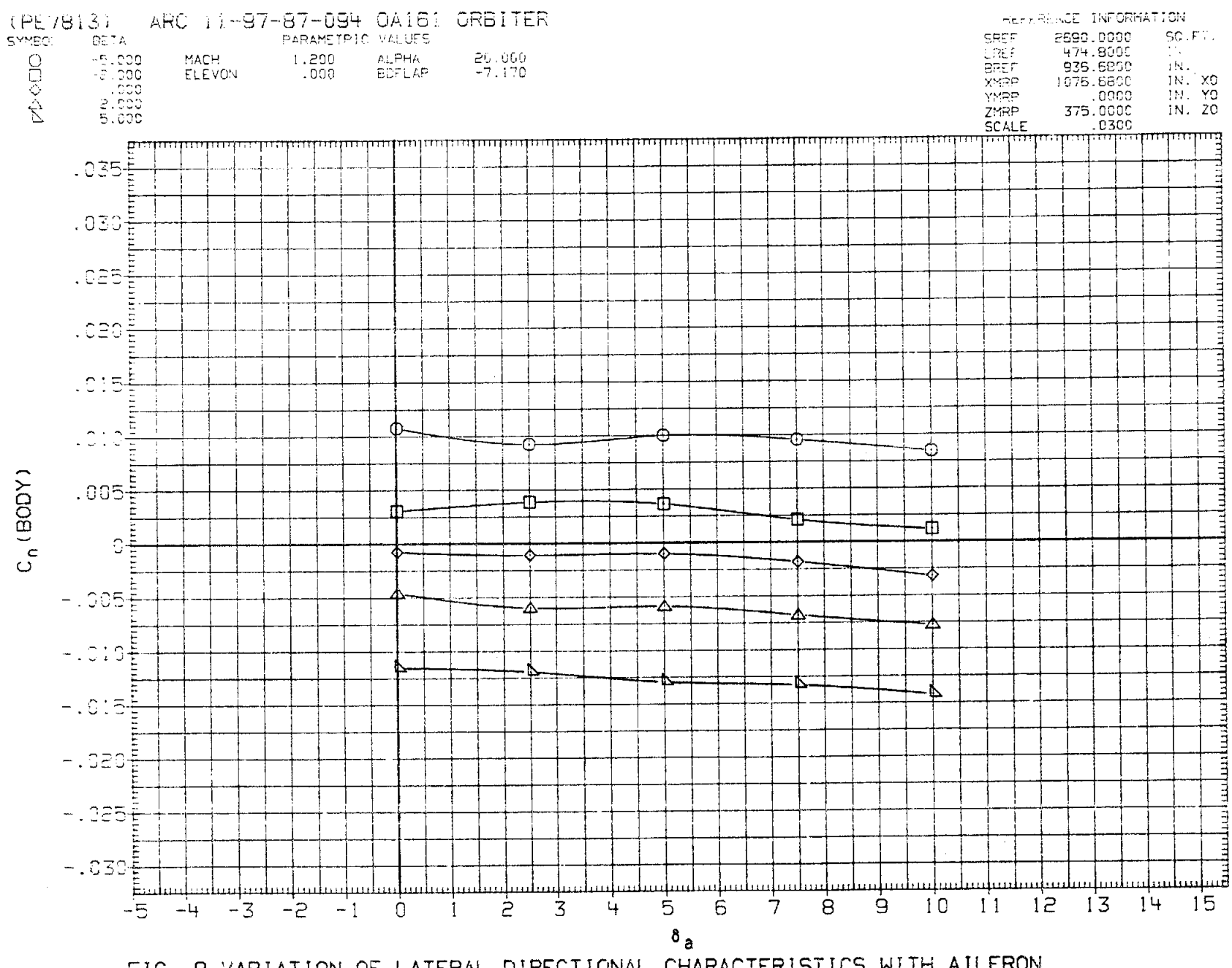


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

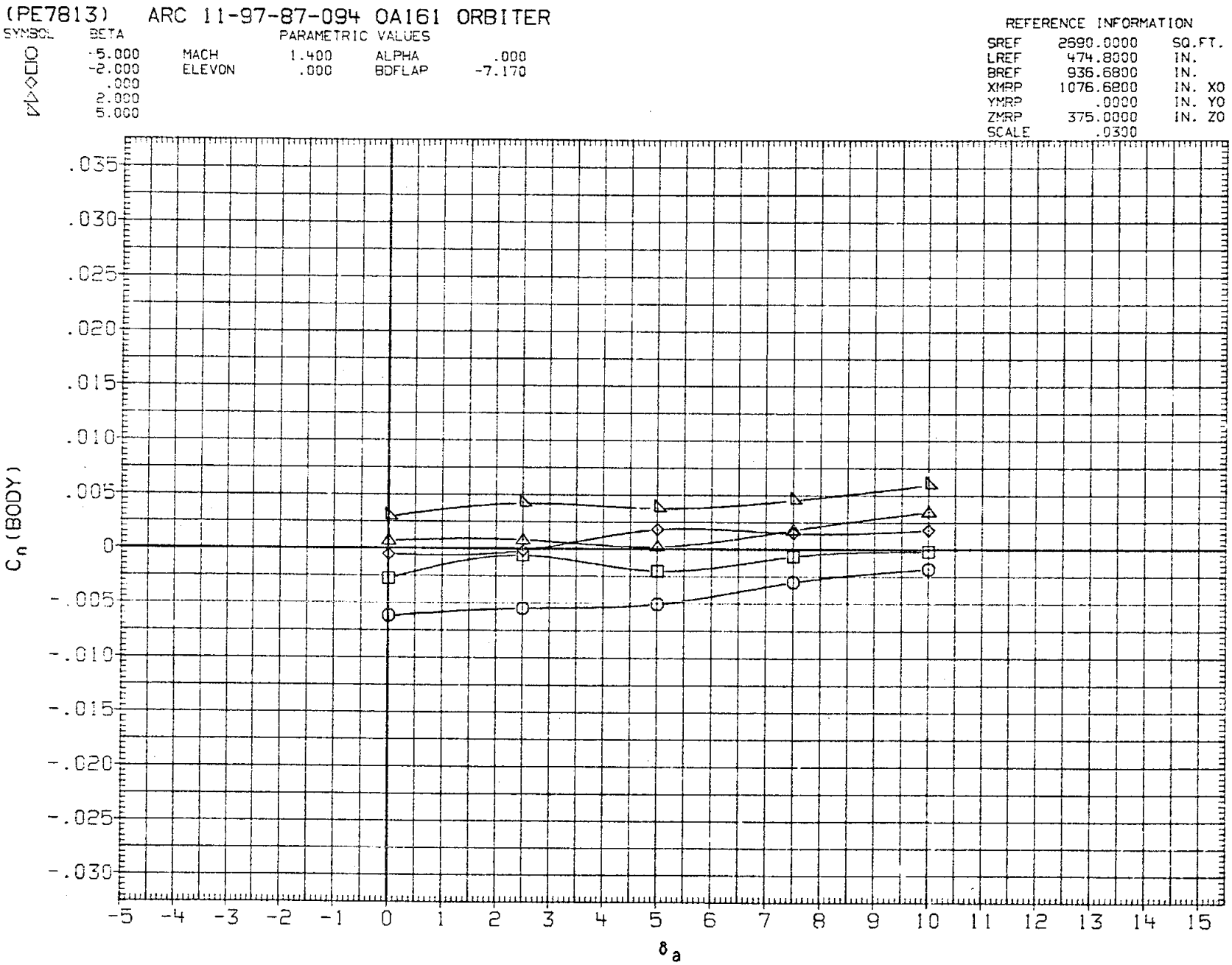


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

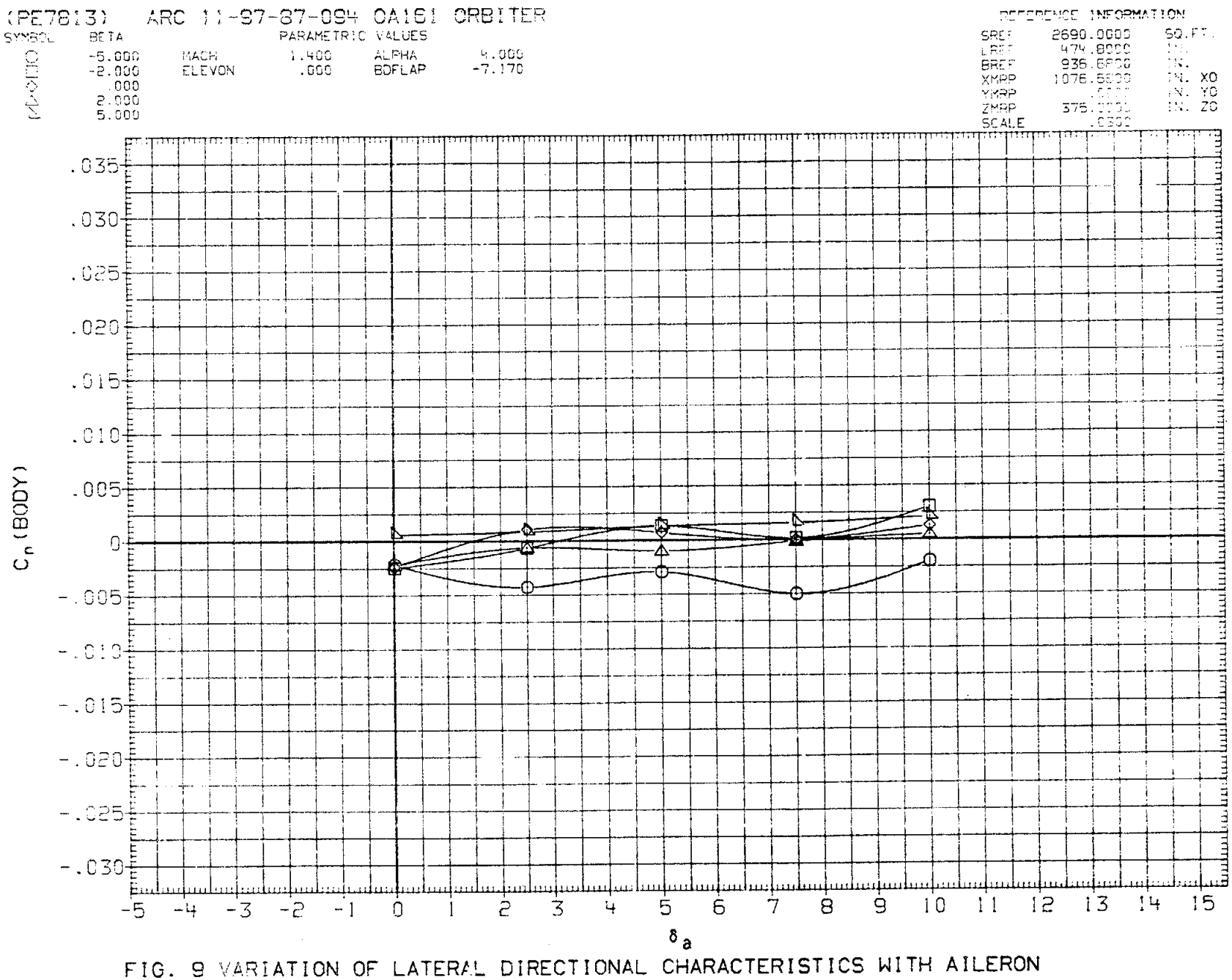


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

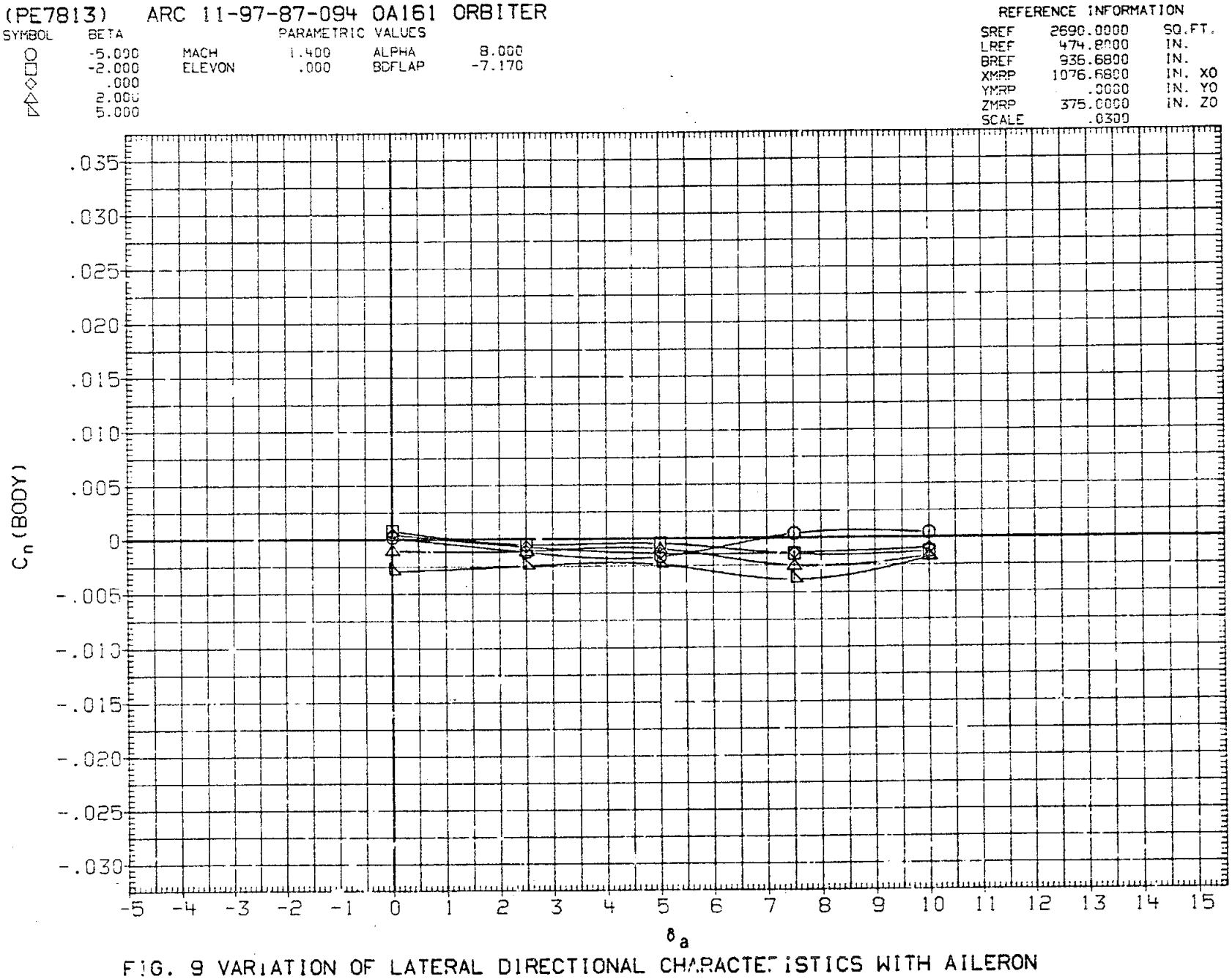


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

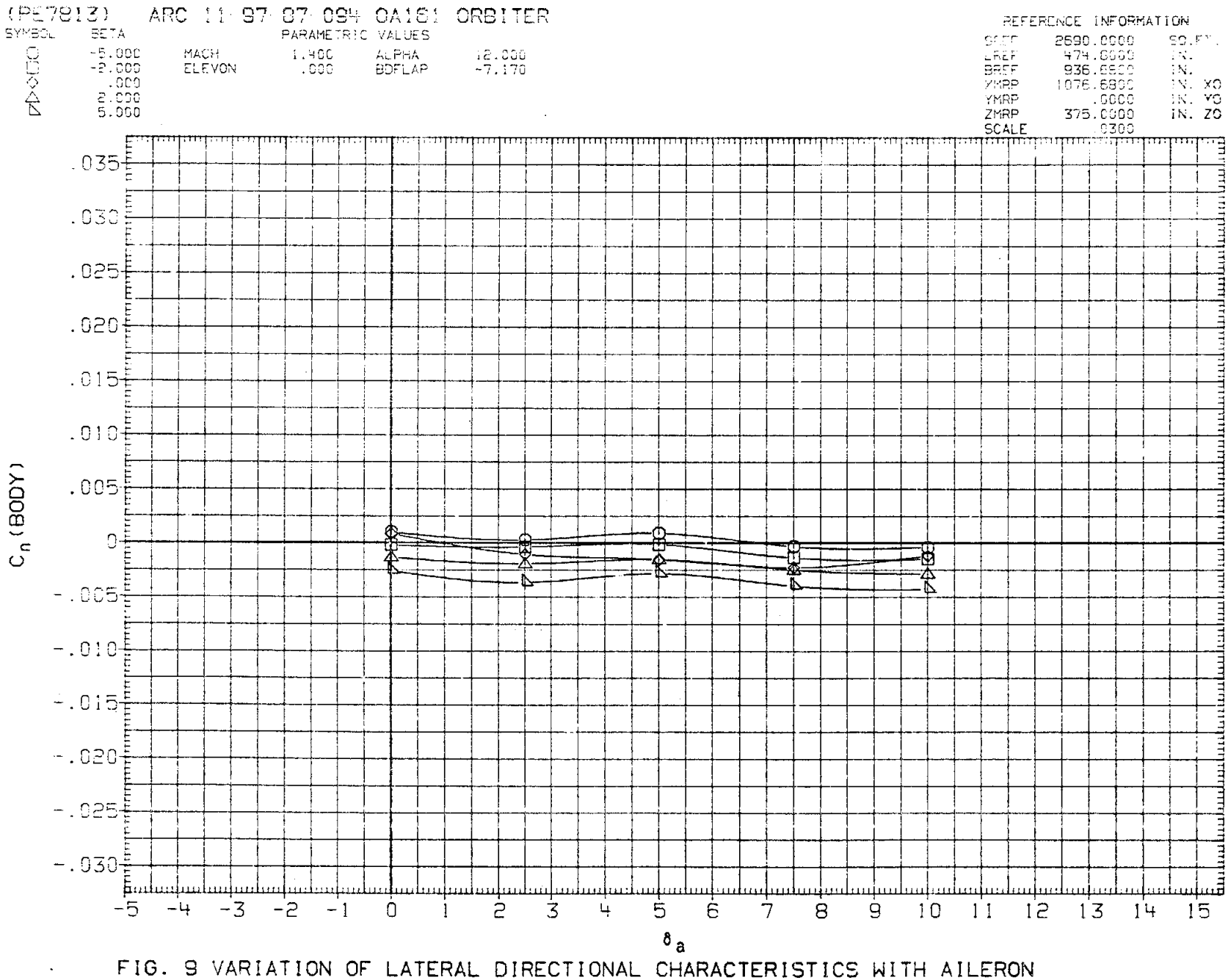


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

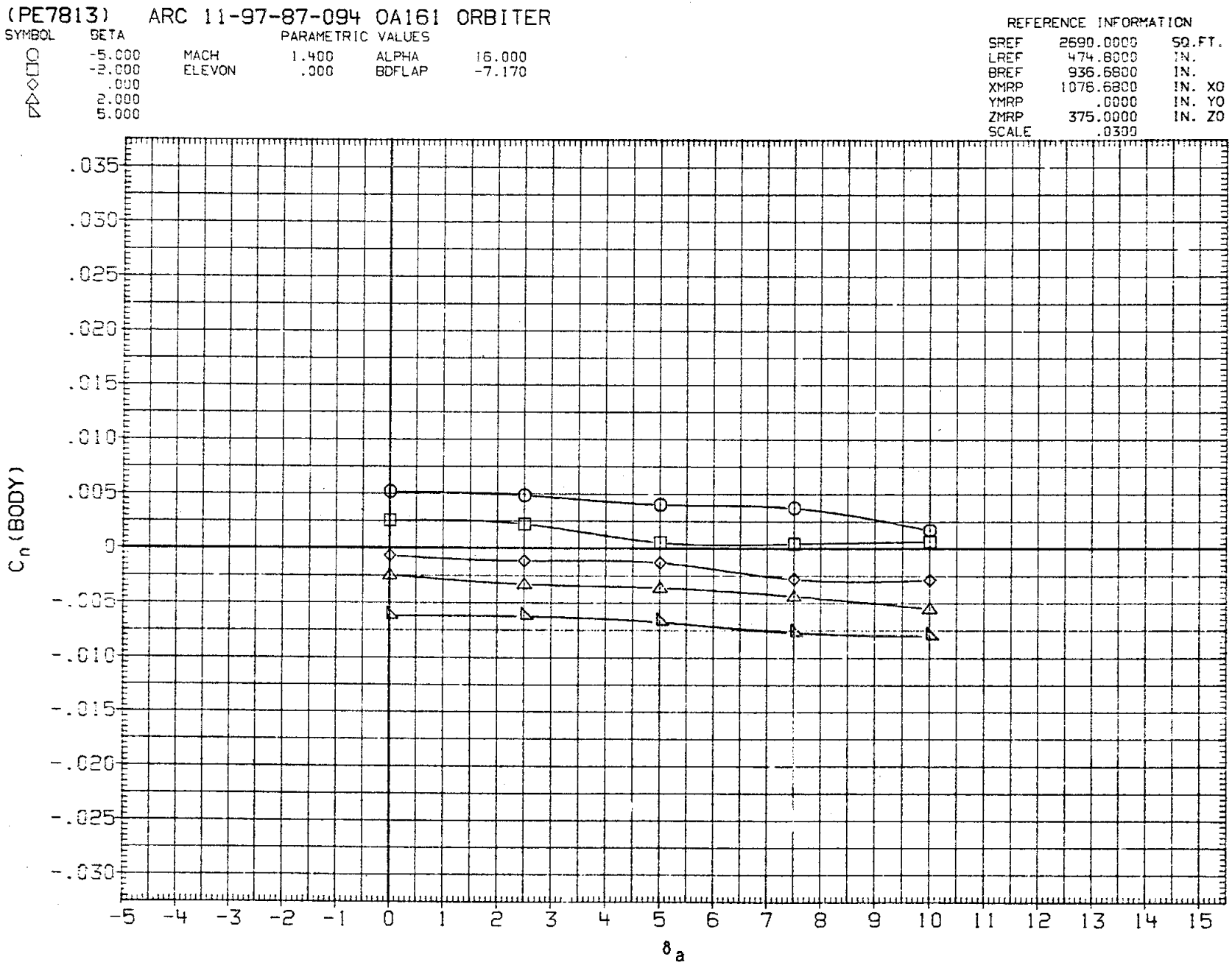


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

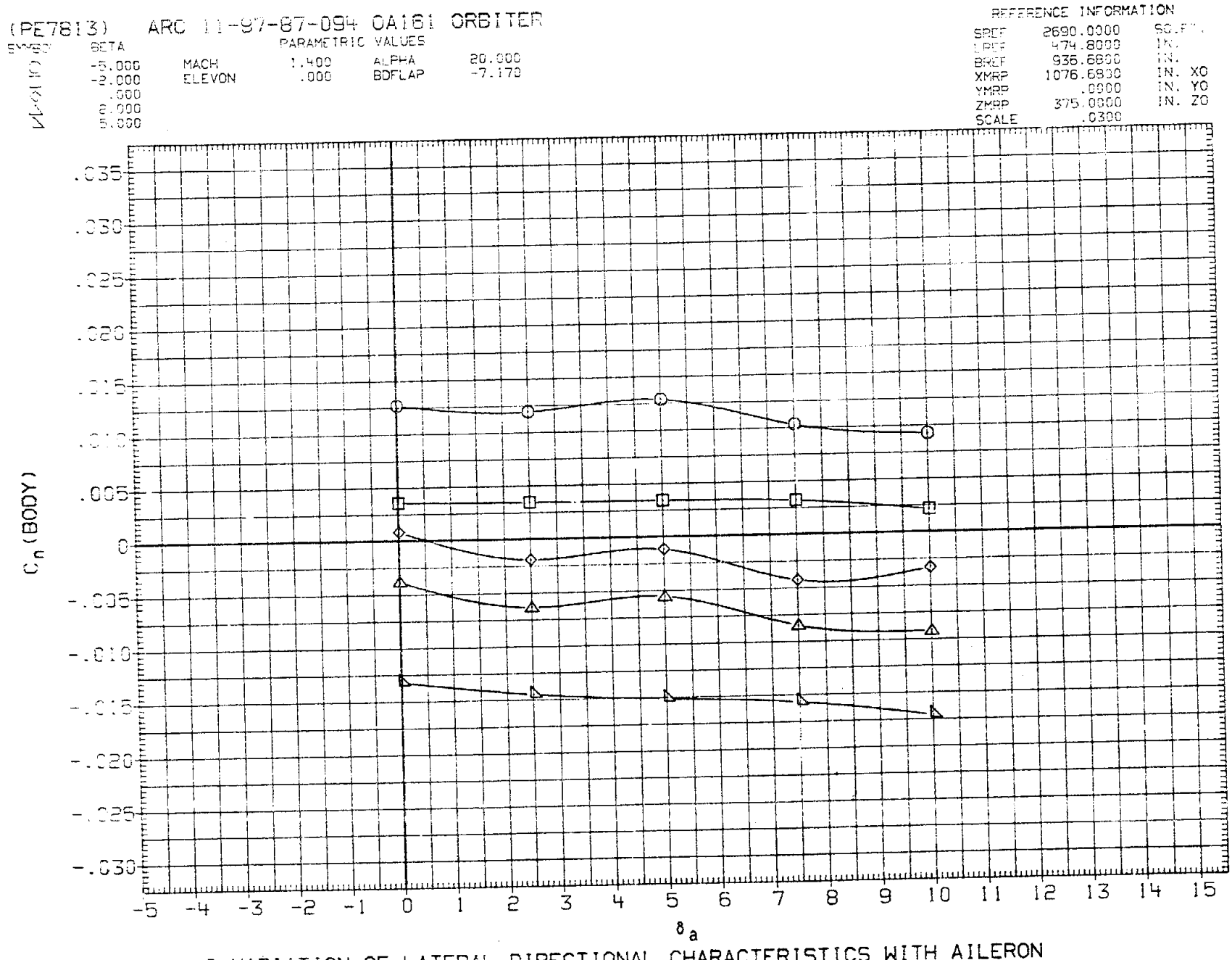


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

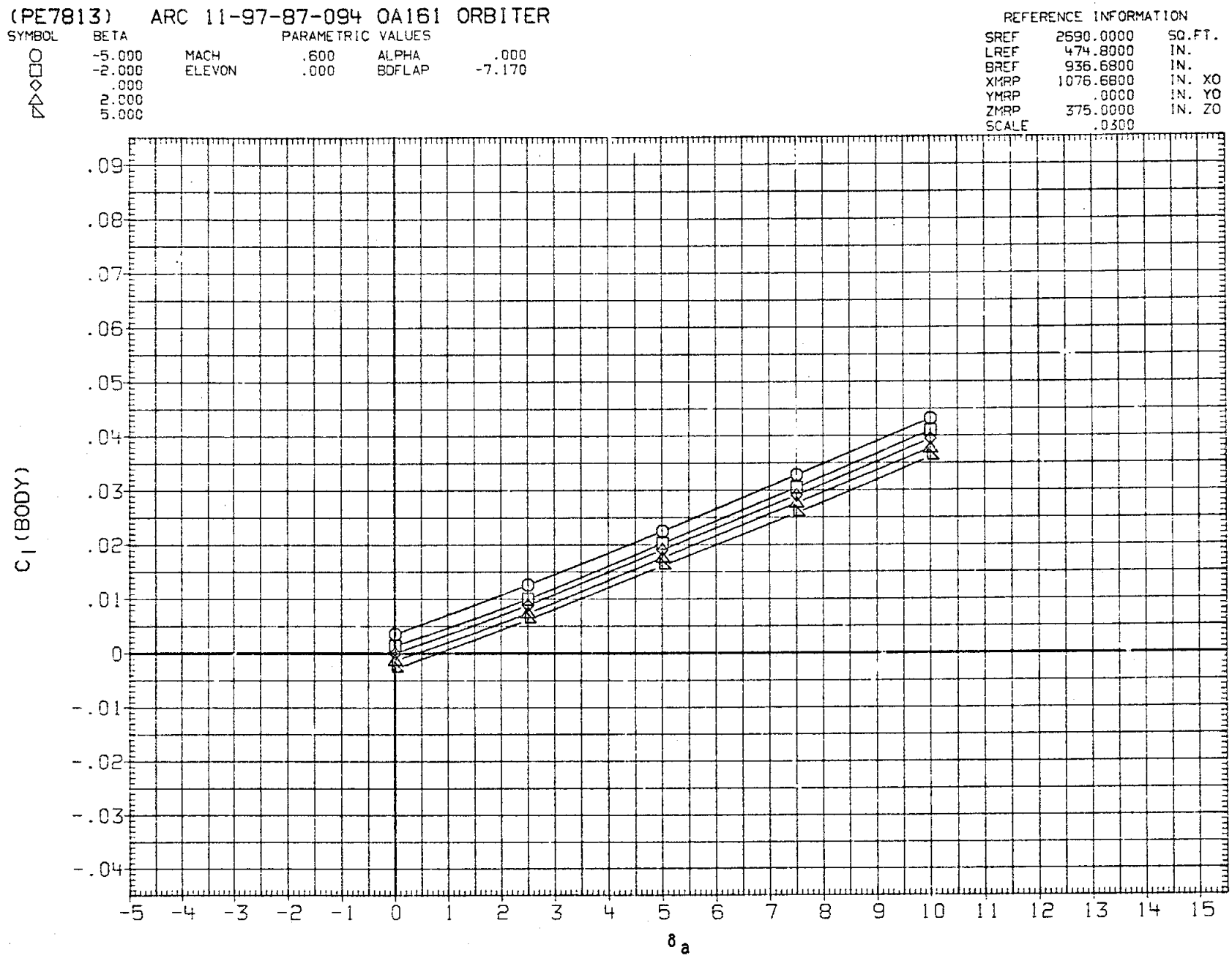


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

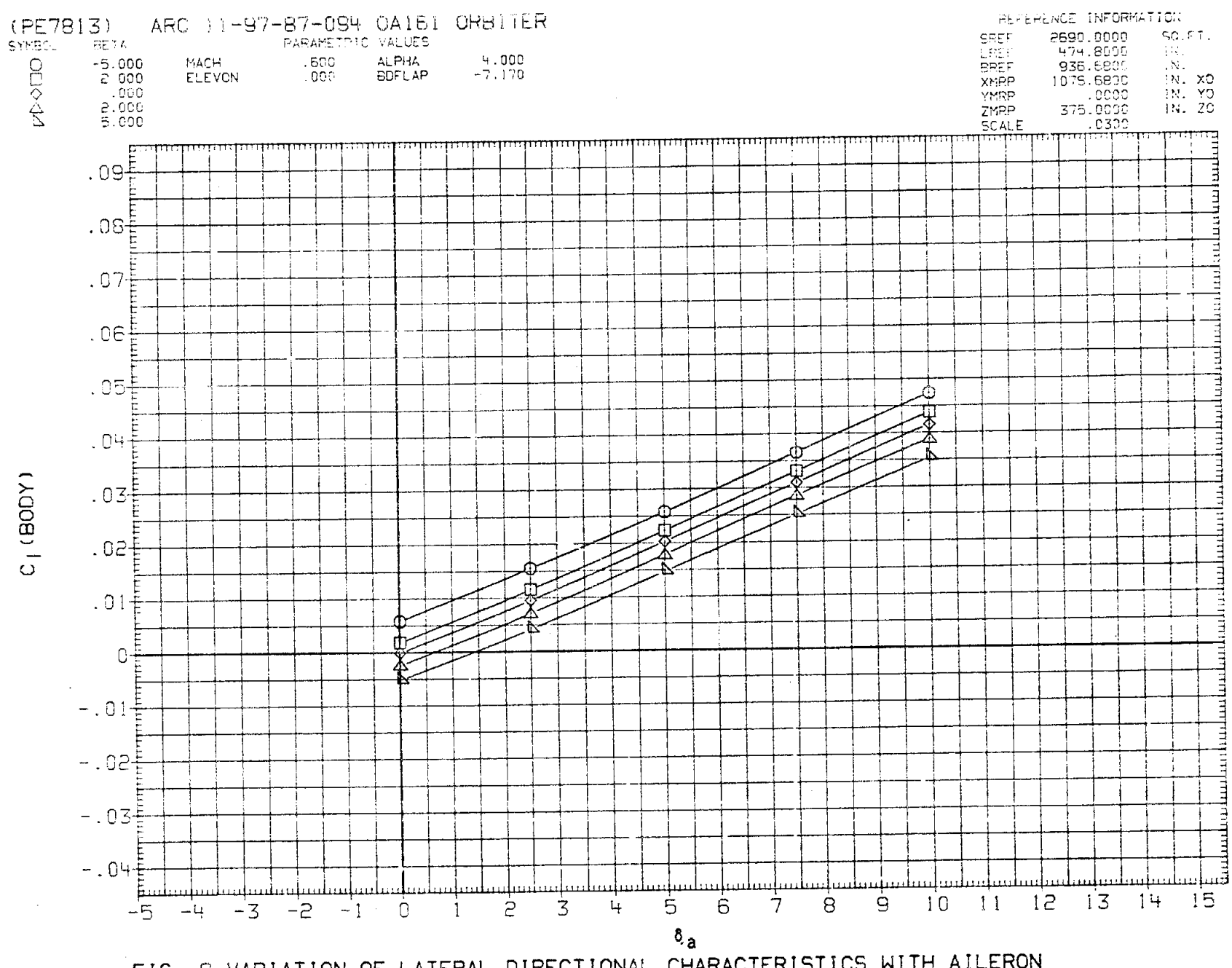


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

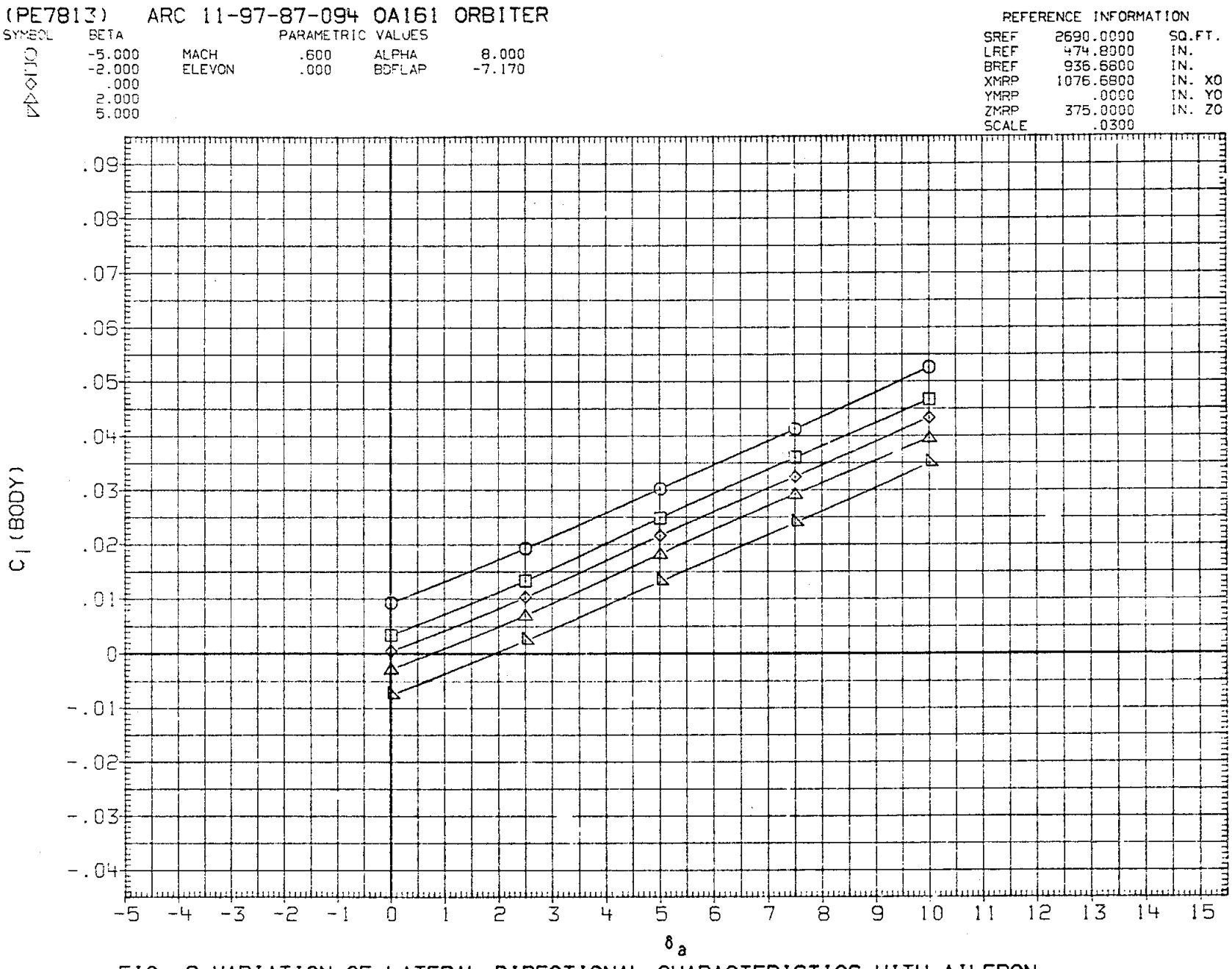


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

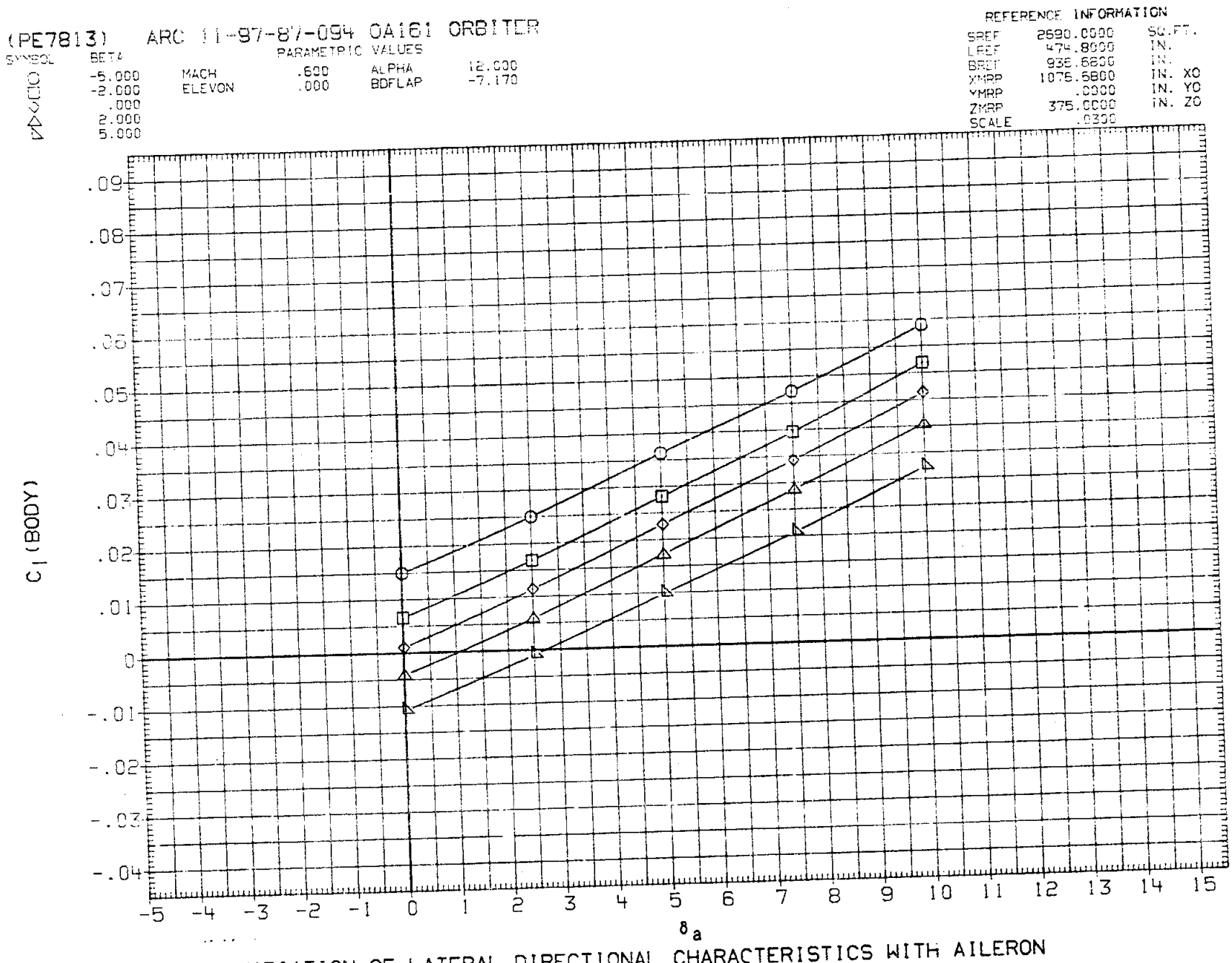


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

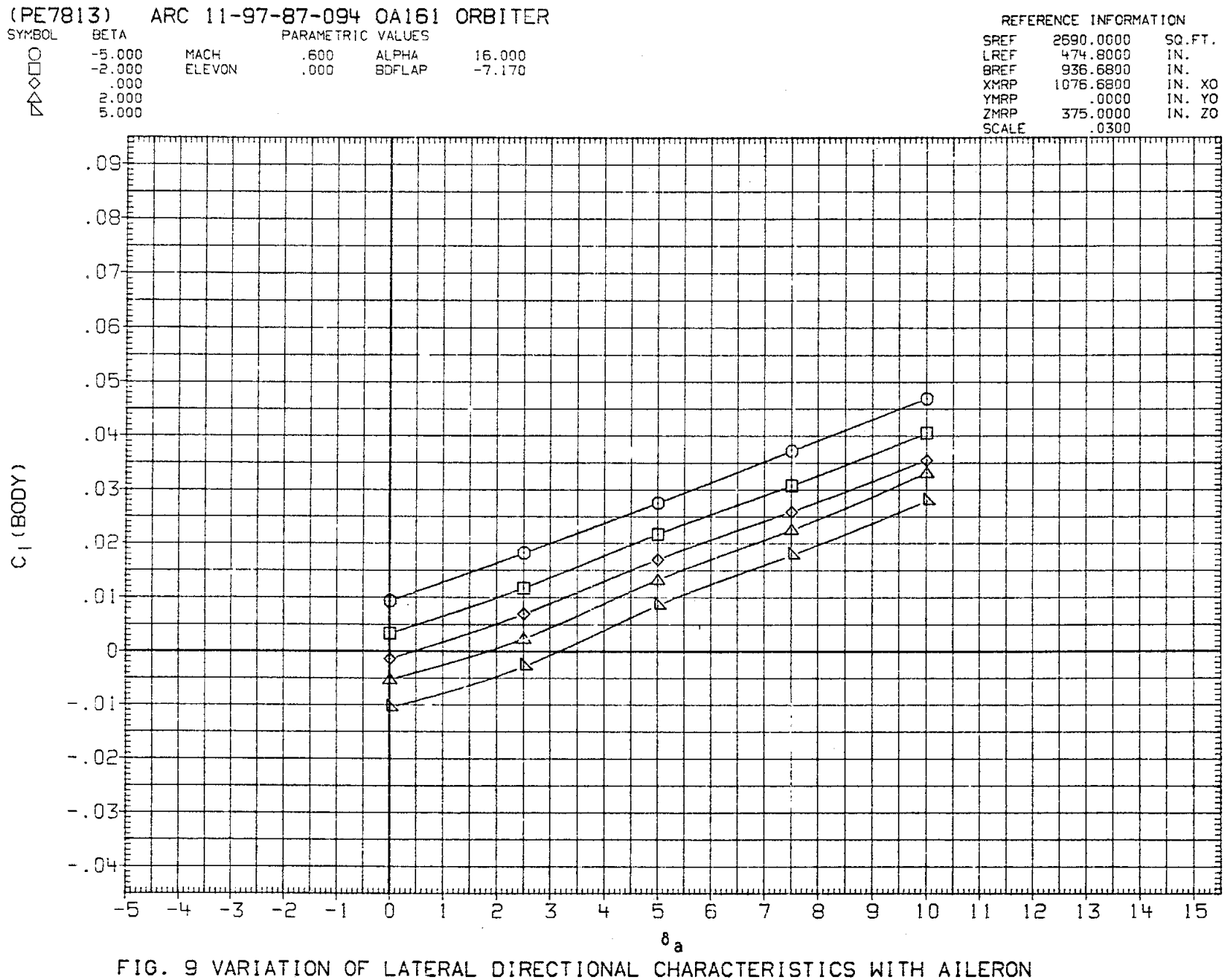


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

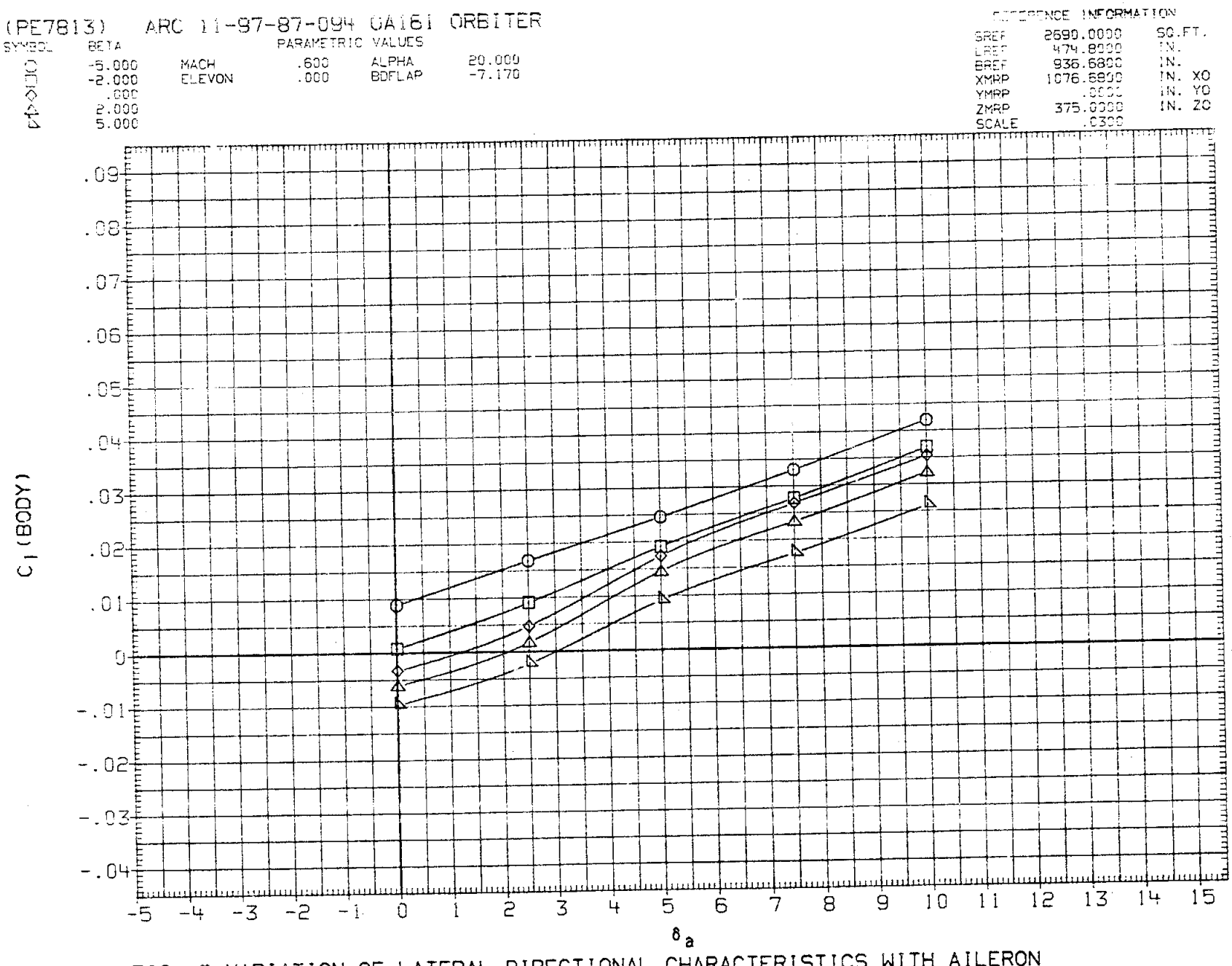


FIG. 5 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

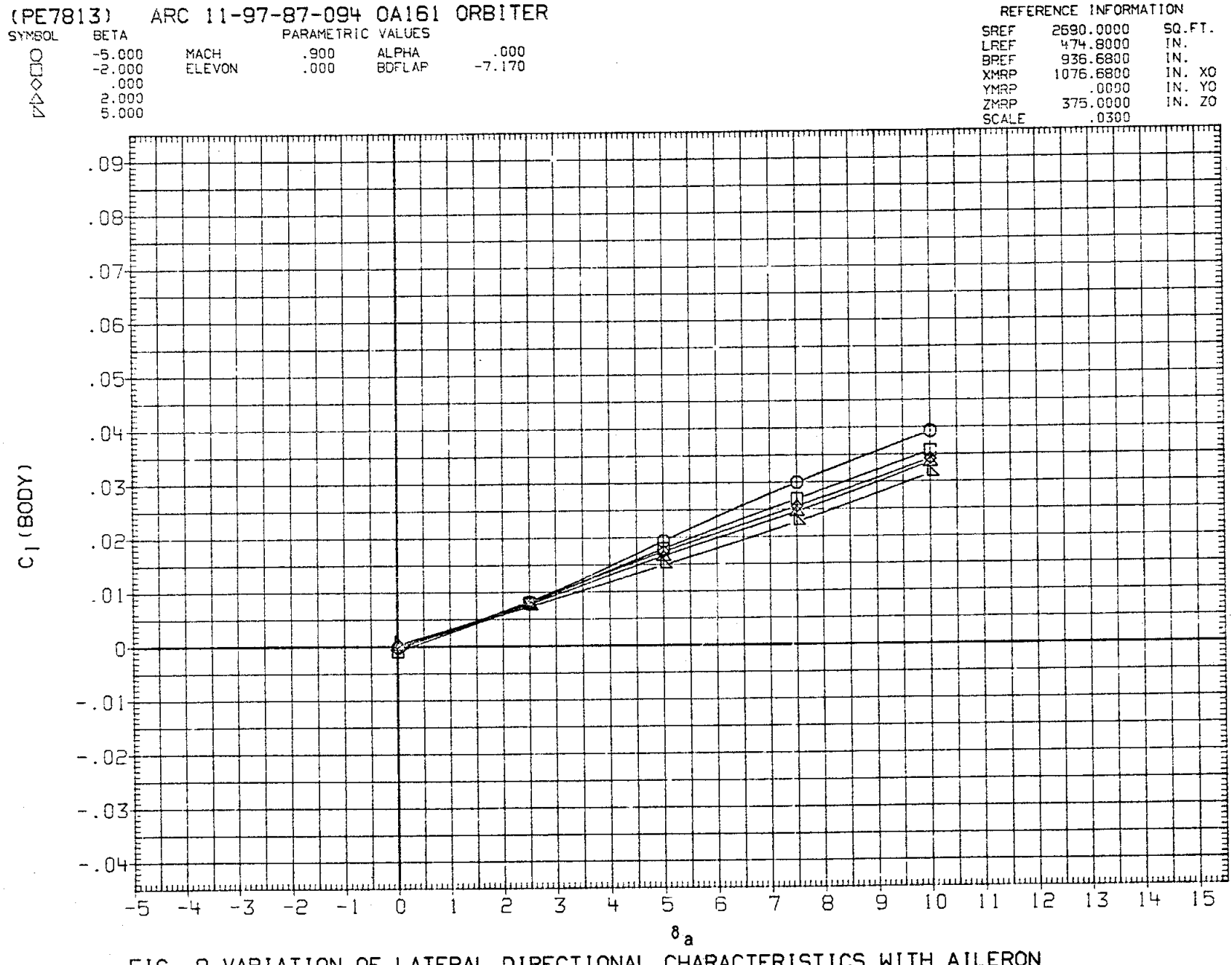


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

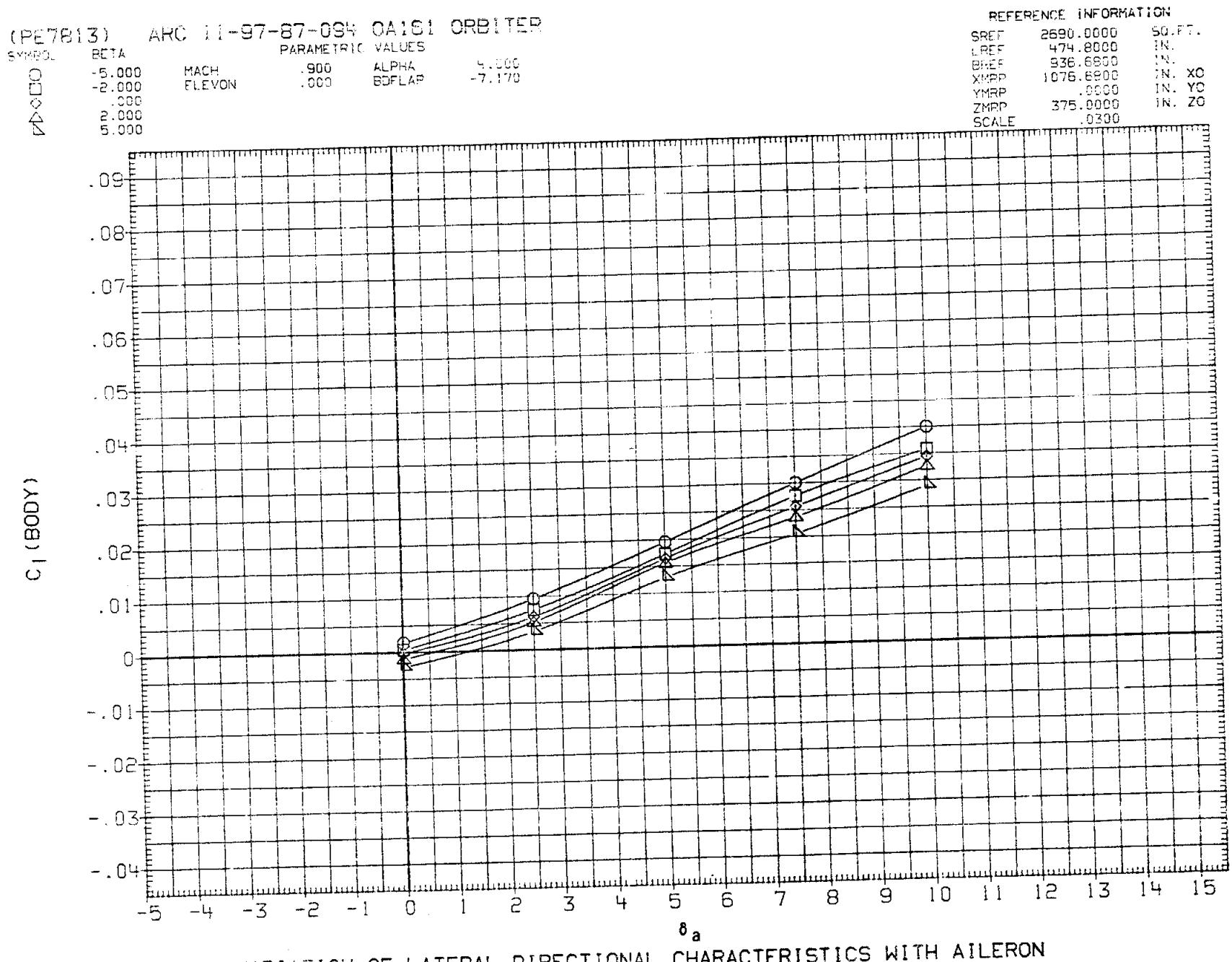


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

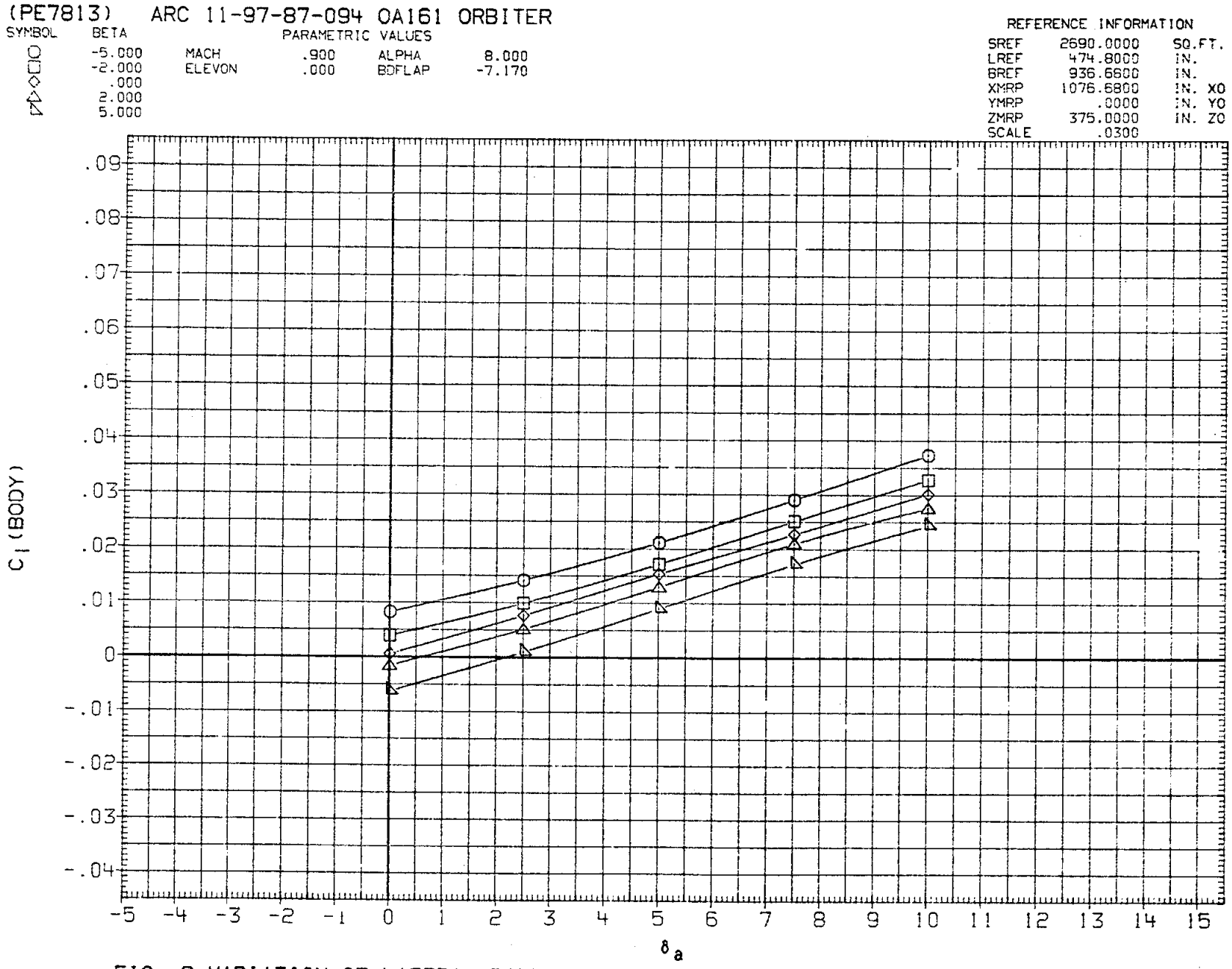


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

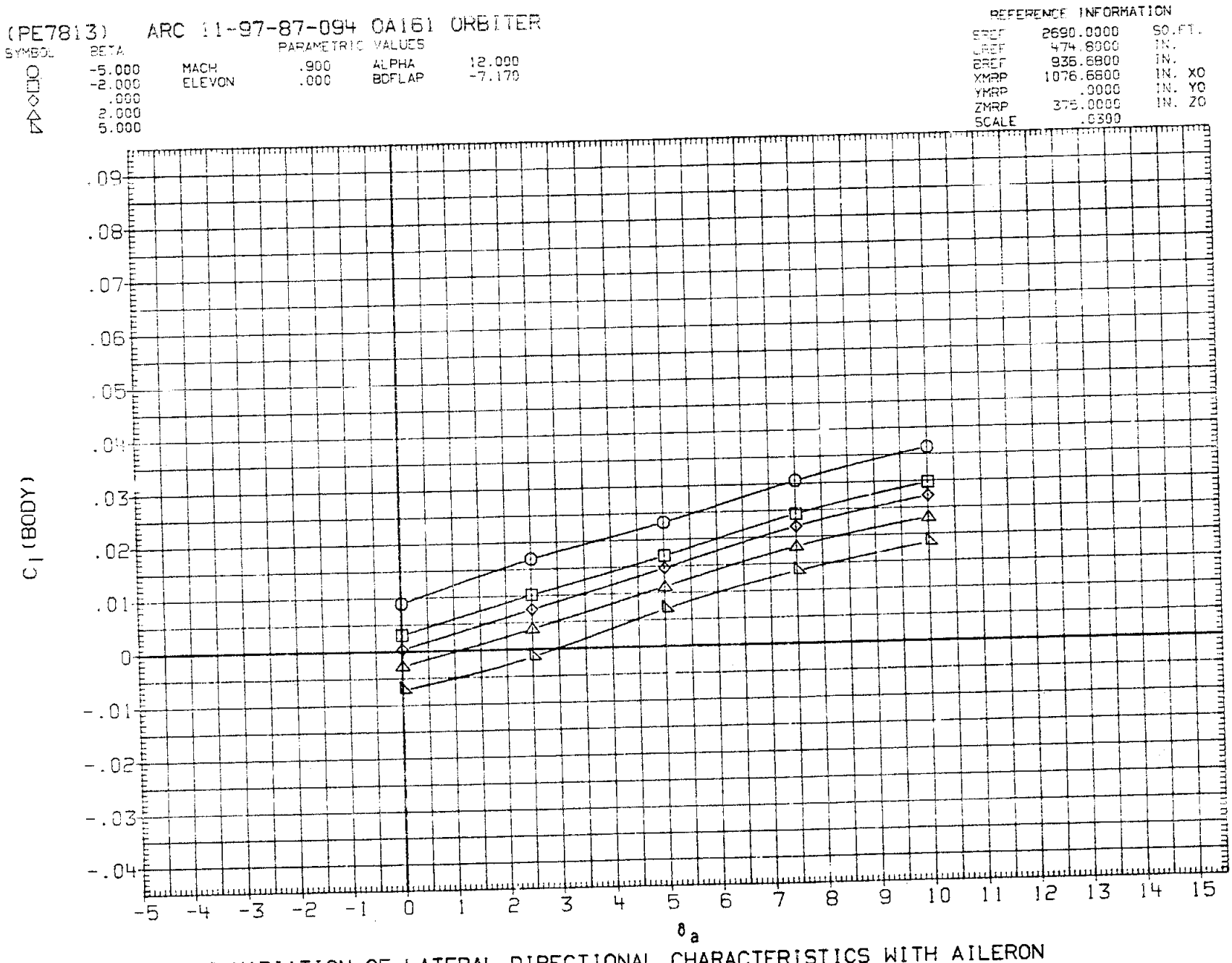


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

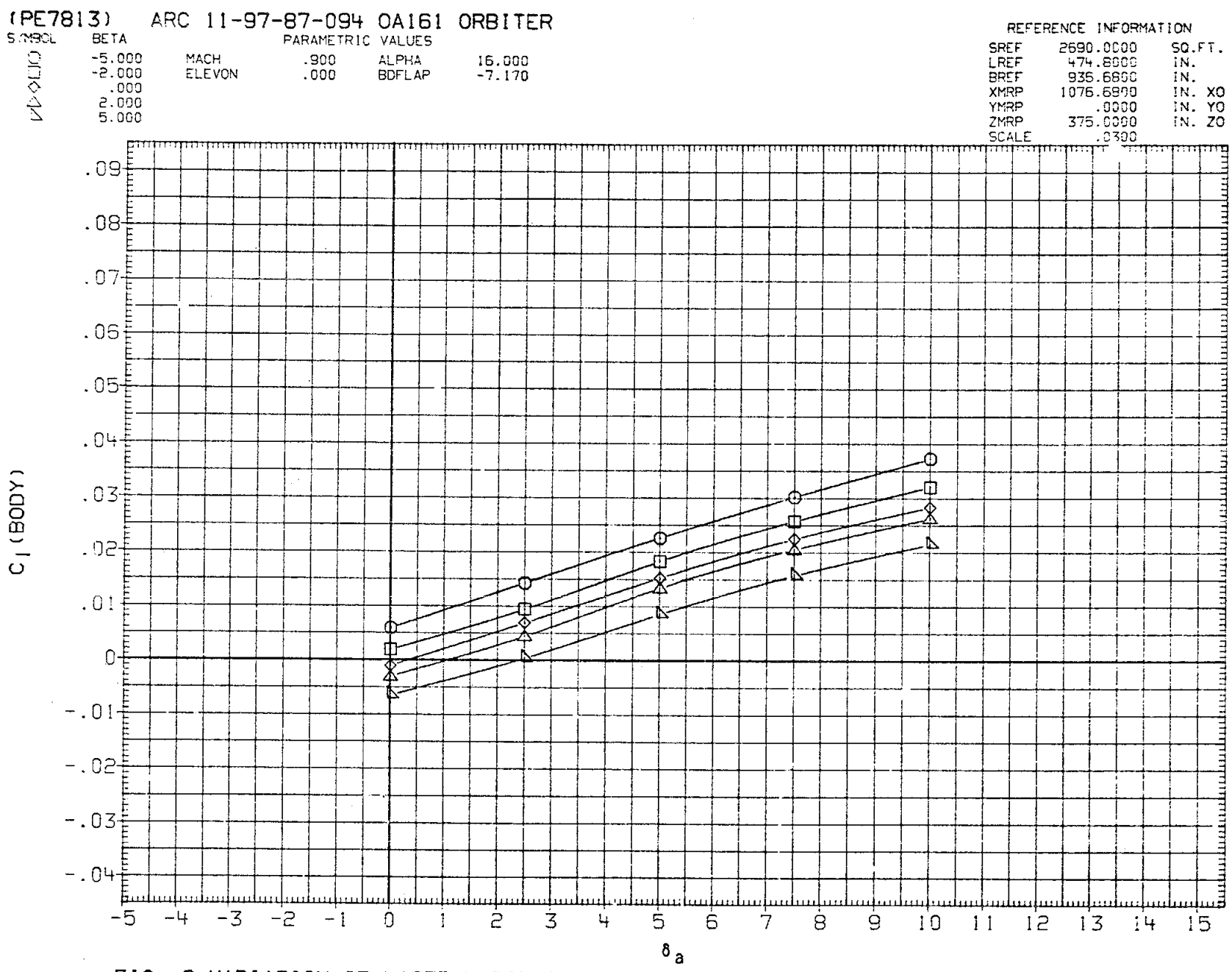


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

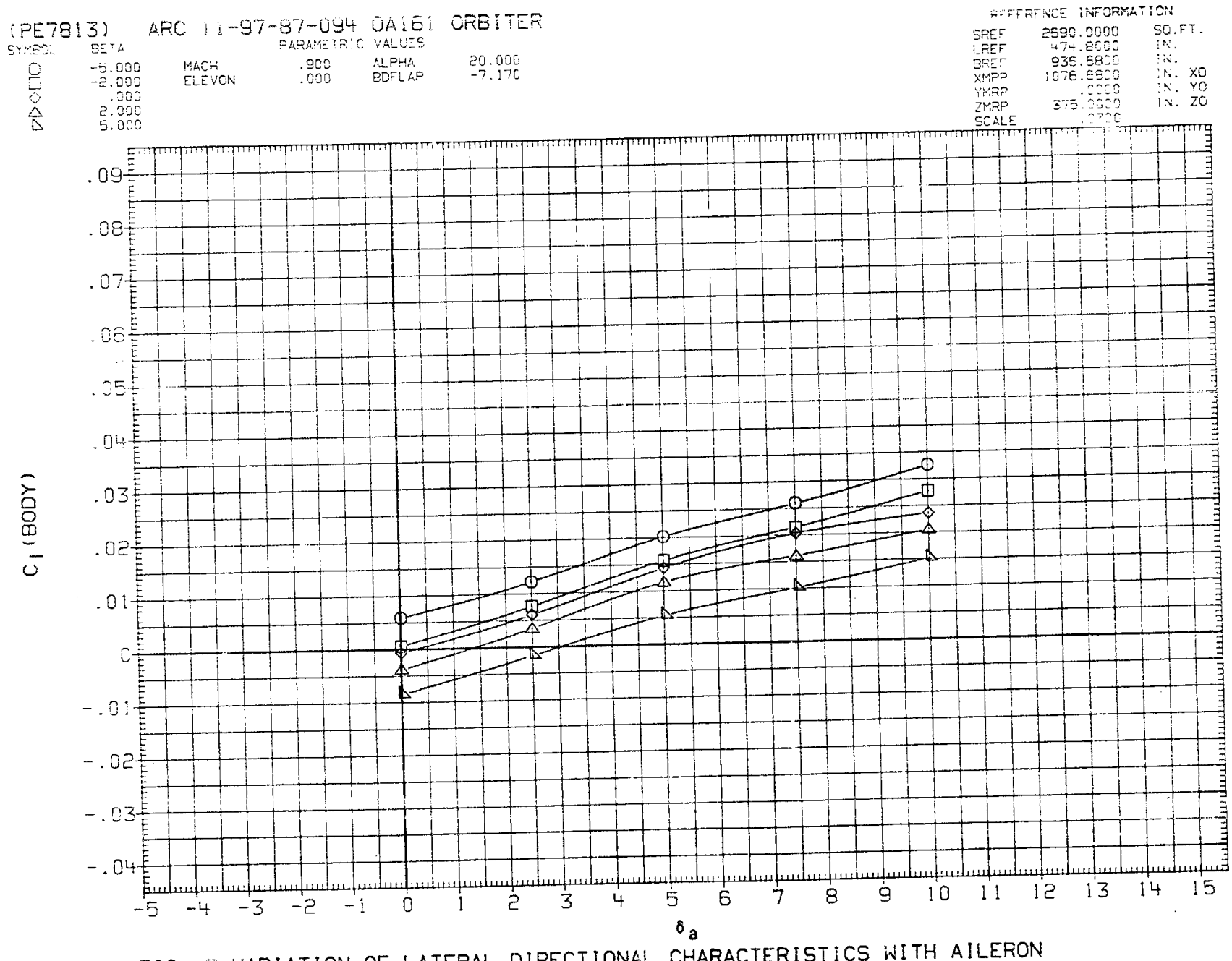


FIG. 3 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

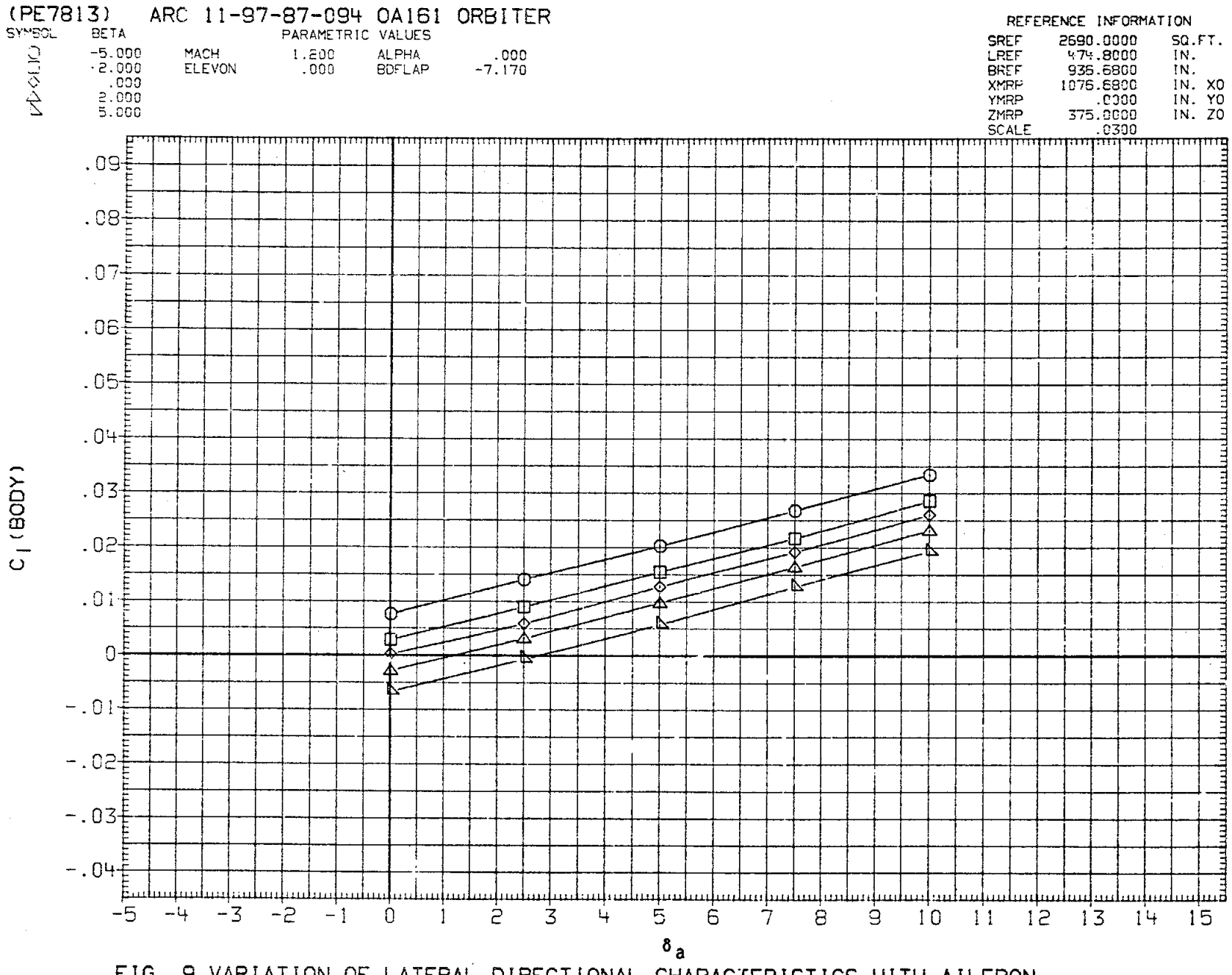


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

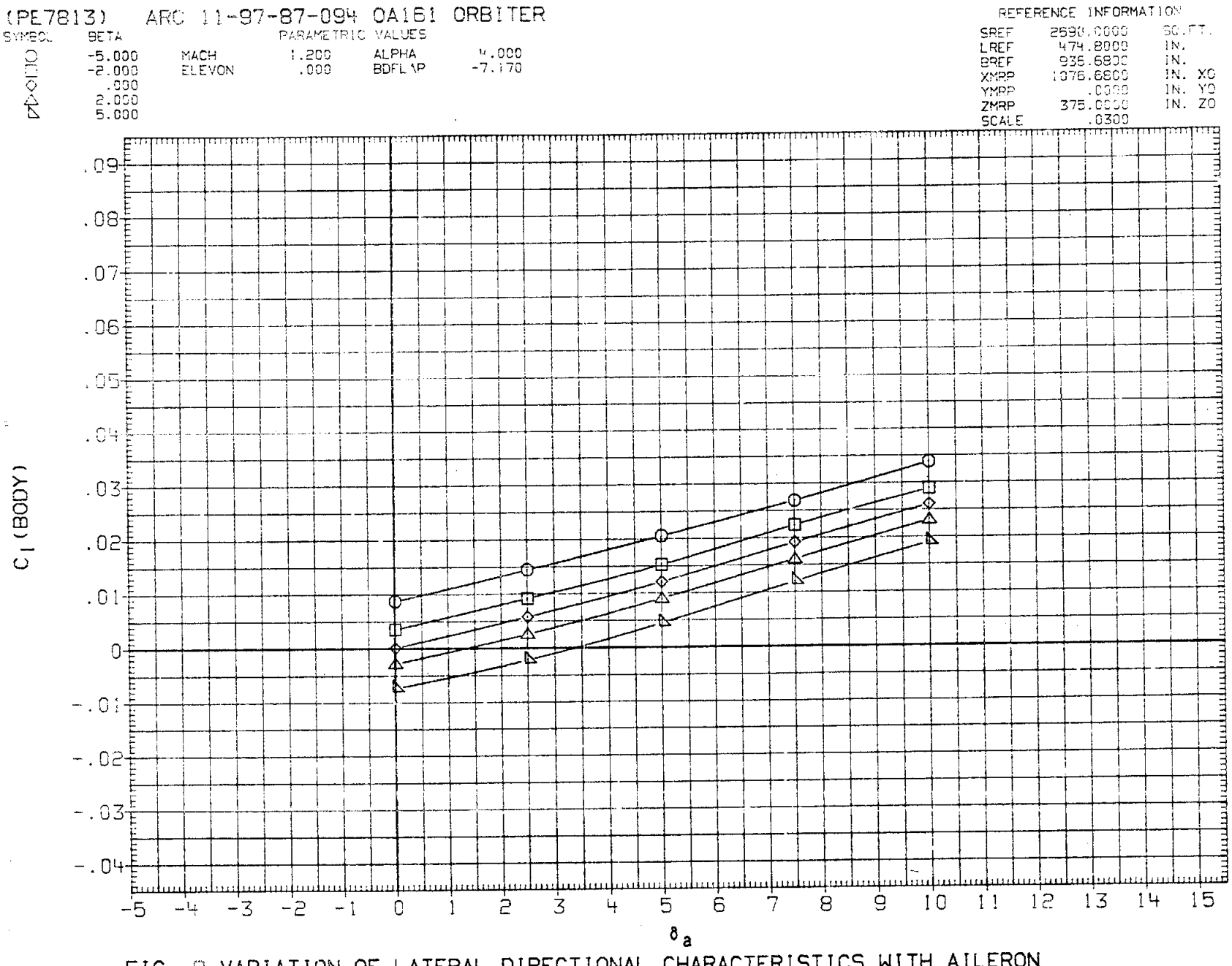


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

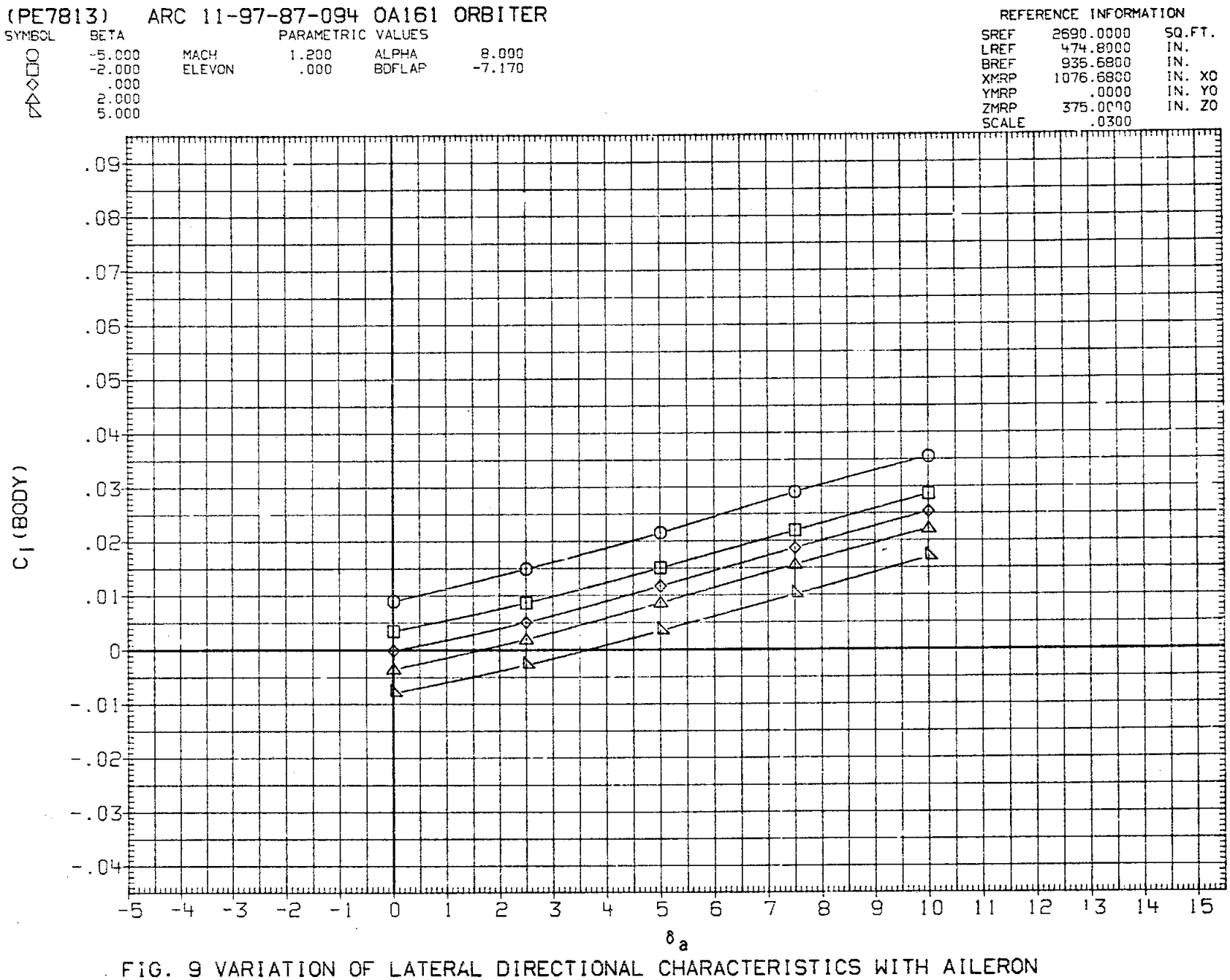


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

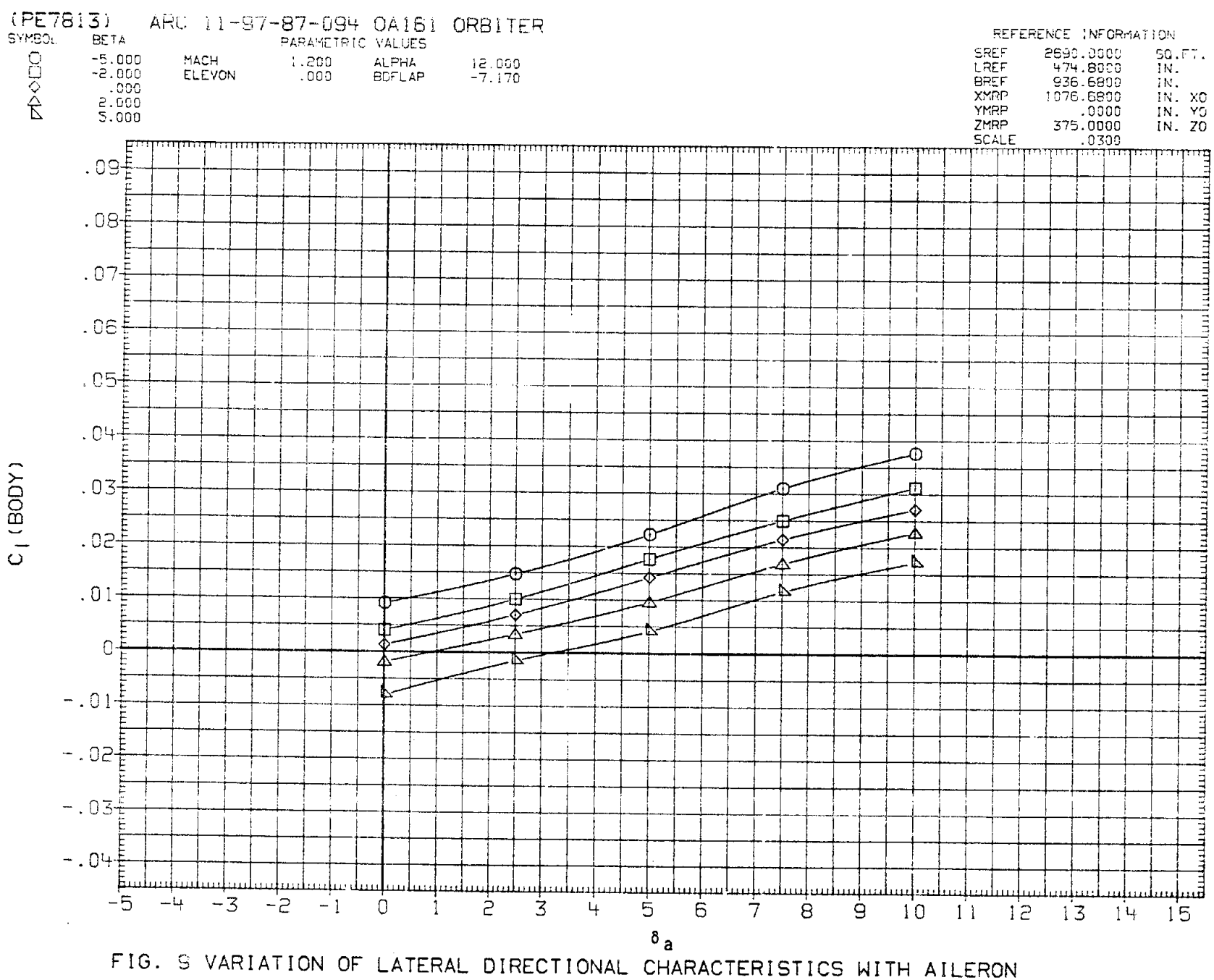


FIG. 5 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

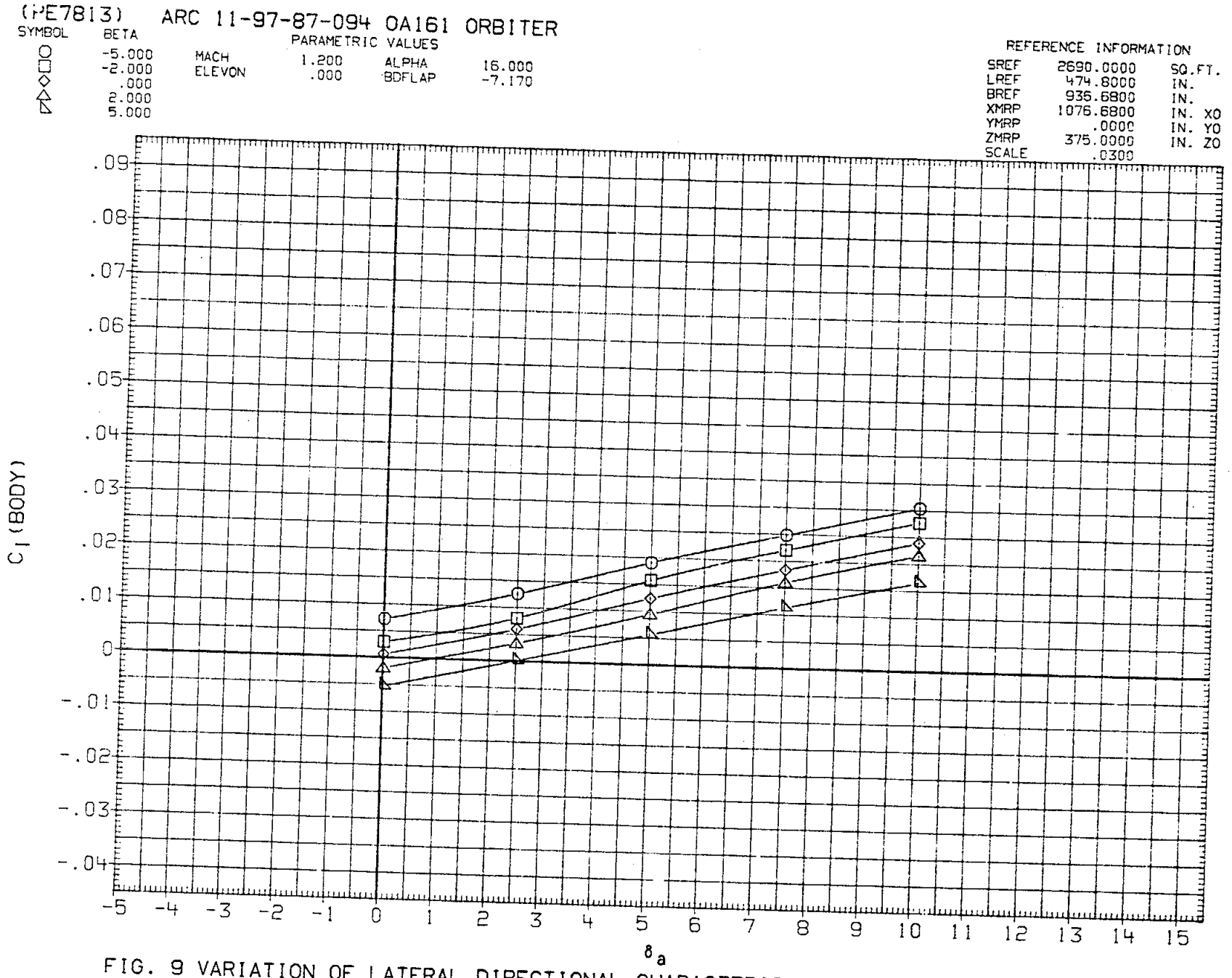


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

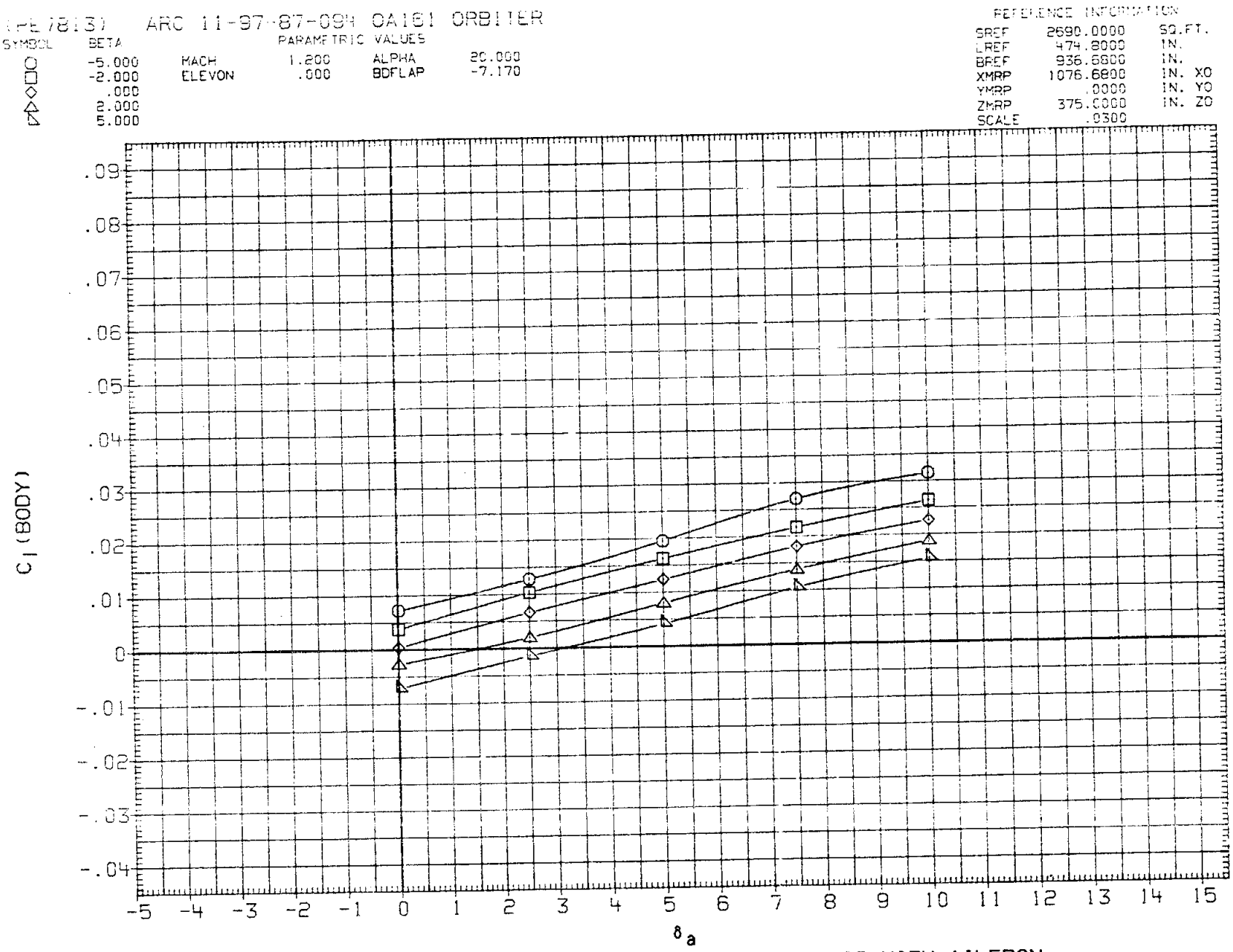


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

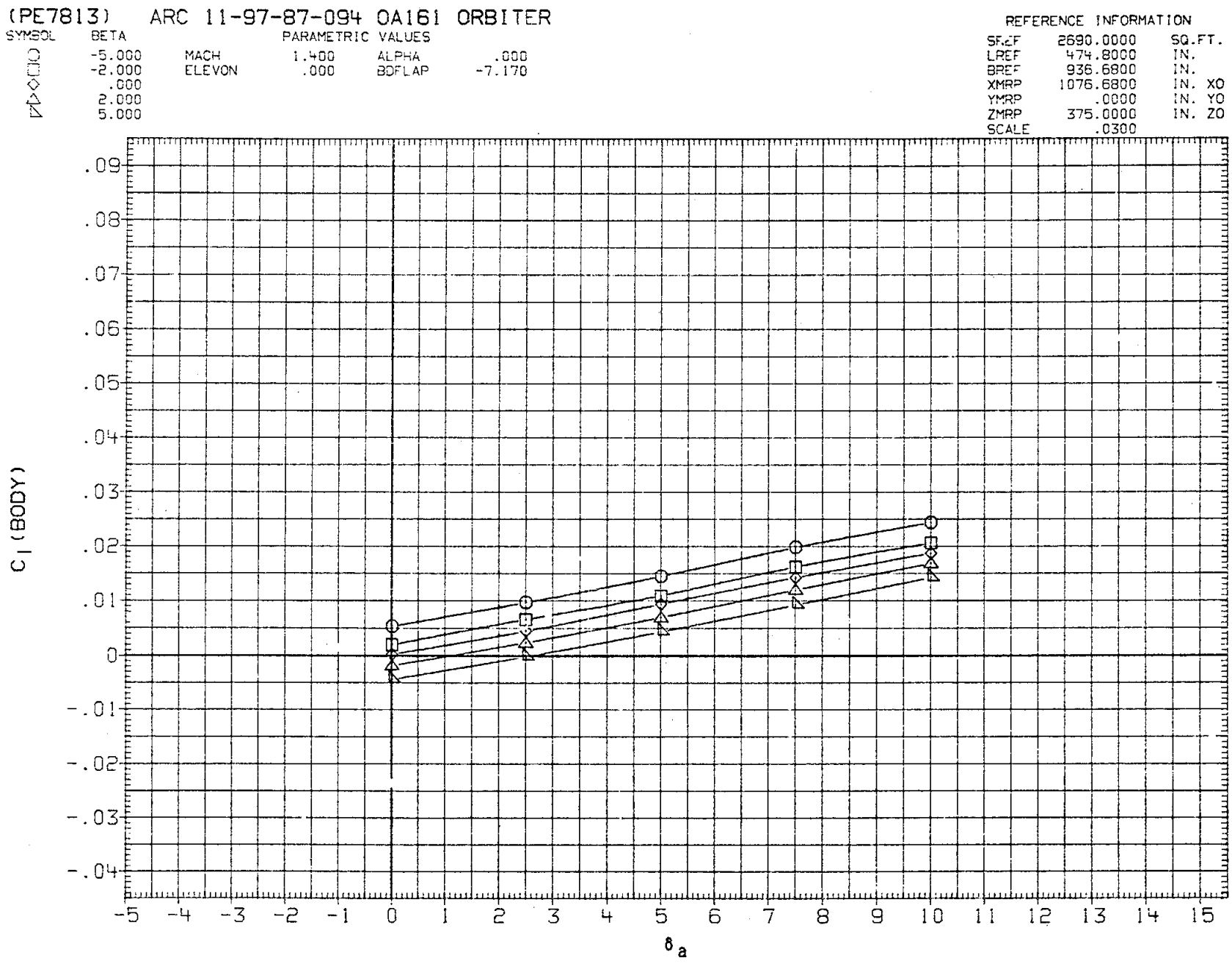


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

(PE7813) ARC 11-97-87-094 OA161 ORBITER

SYMBOL	BETA
○	-5.000
□	-2.000
◇	.000
△	2.000
◺	5.000

PARAMETRIC VALUES

MACH	1.400	ALPHA	4.000
ELEVON	.000	BDFLAP	-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

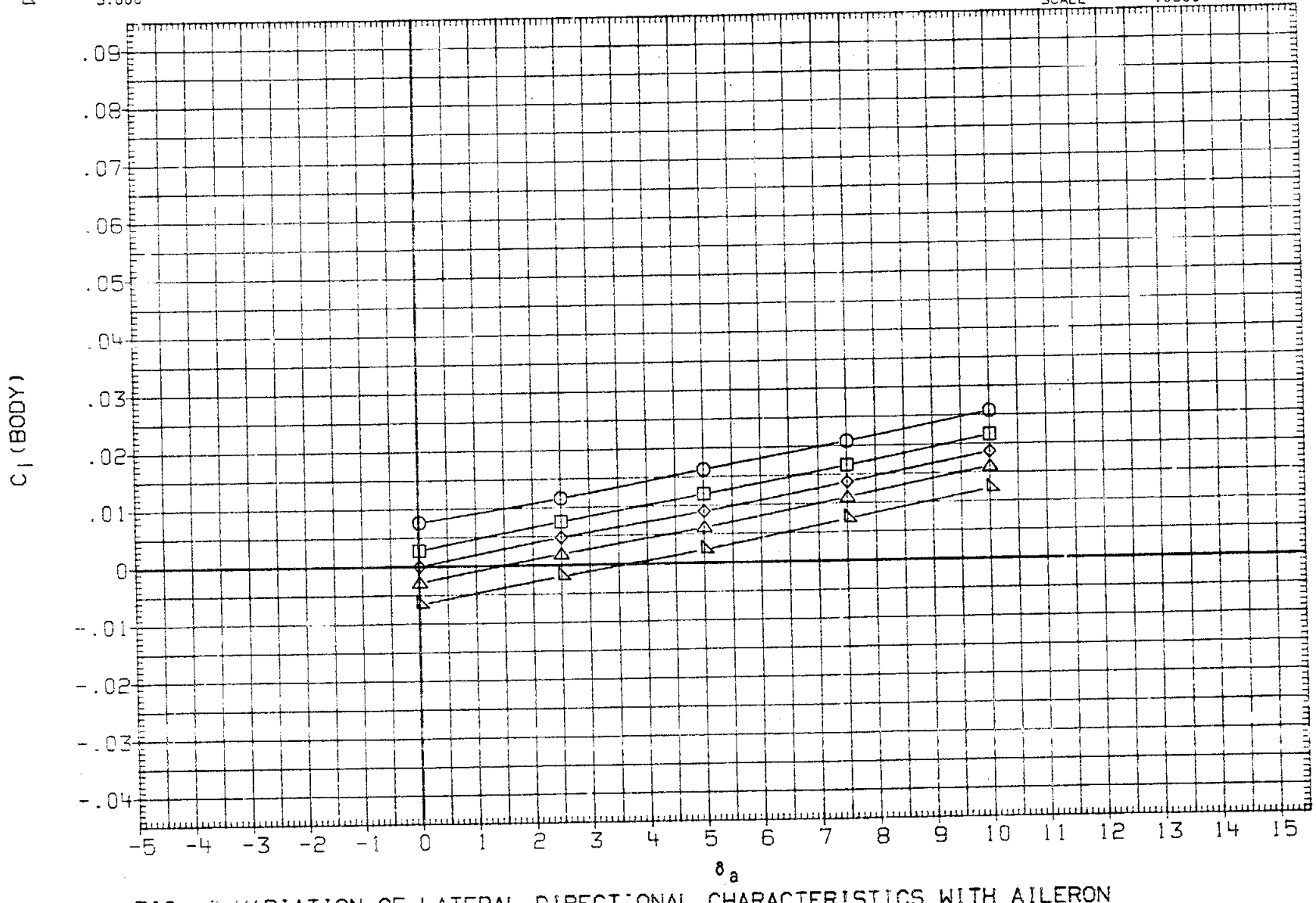


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

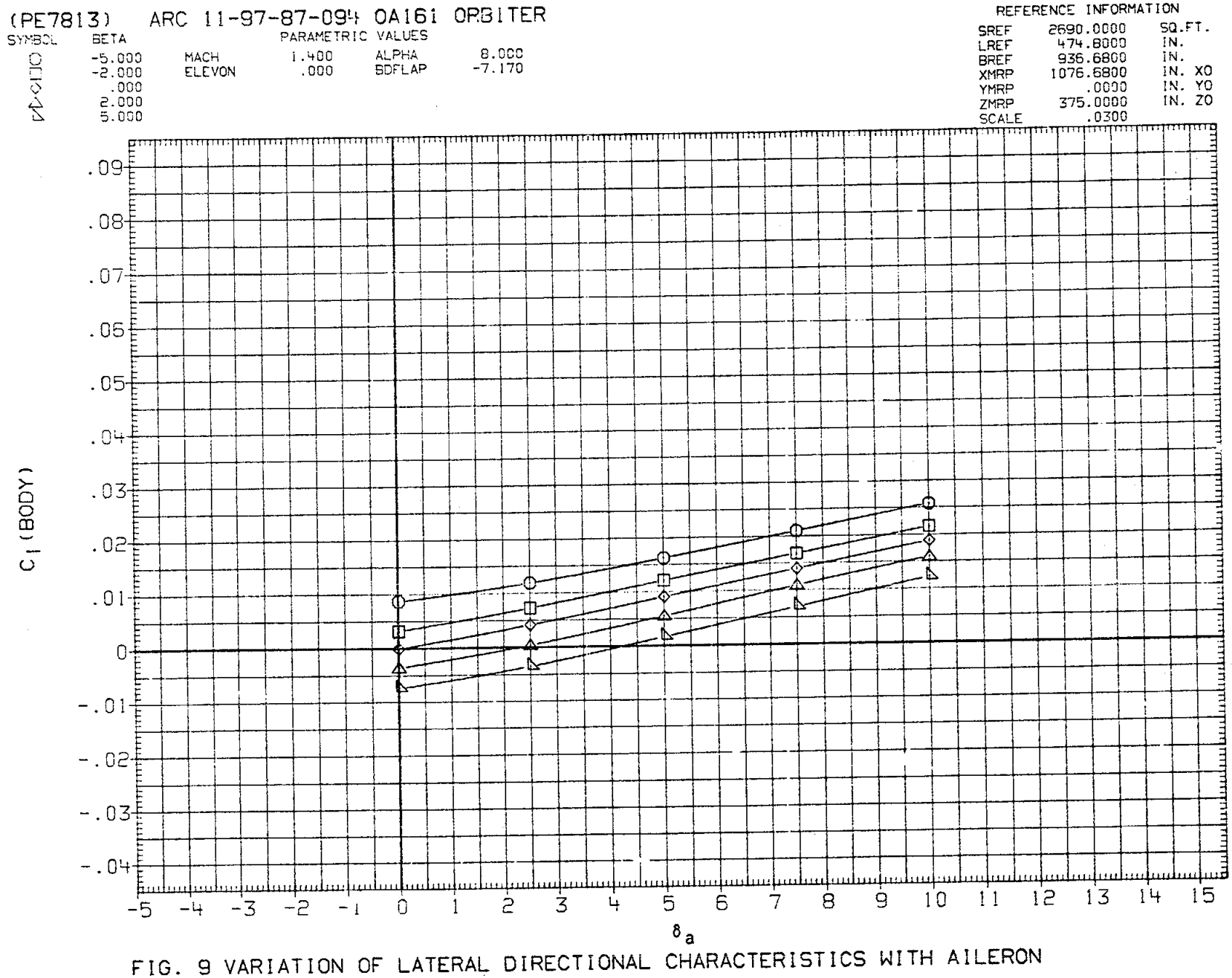


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

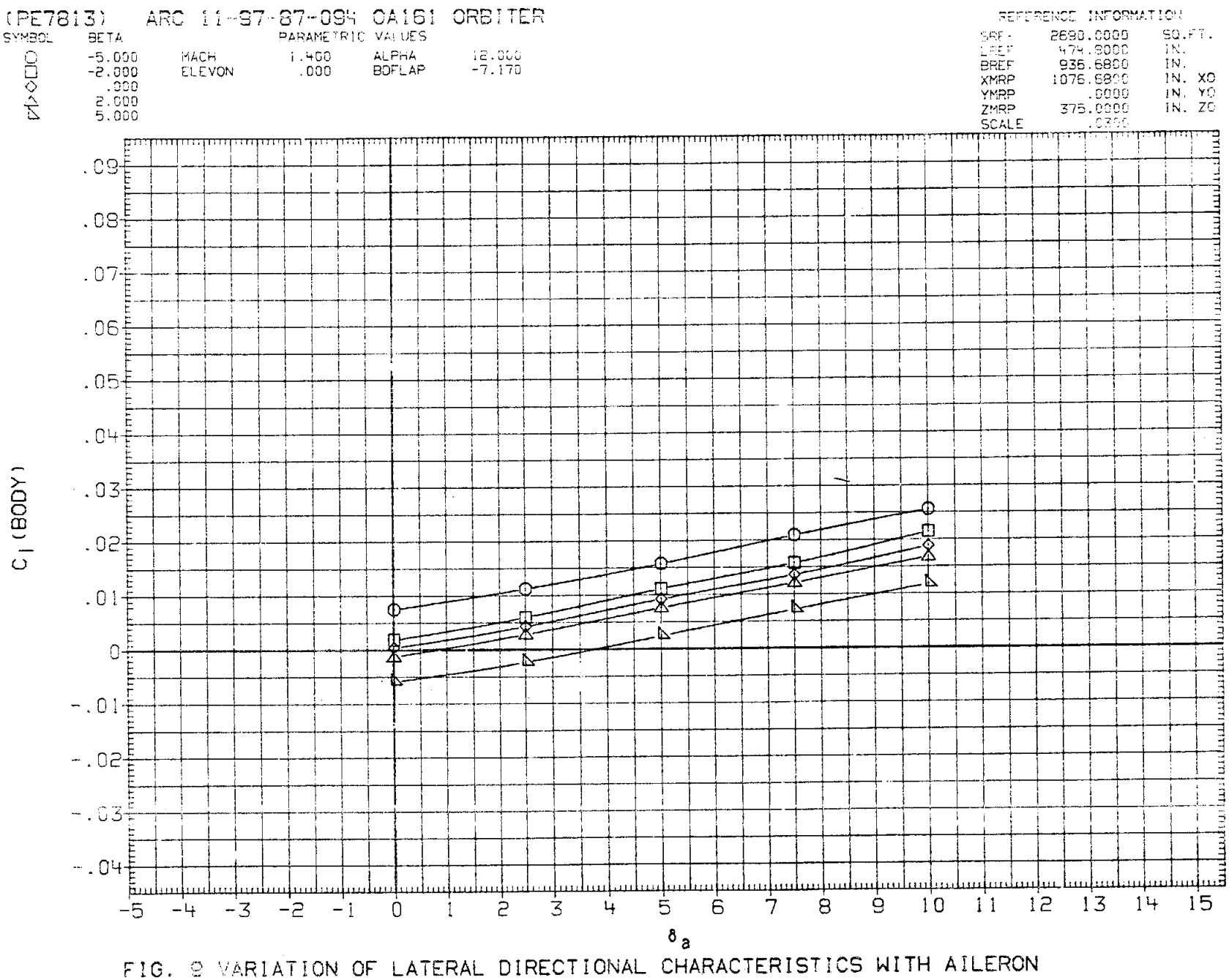


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

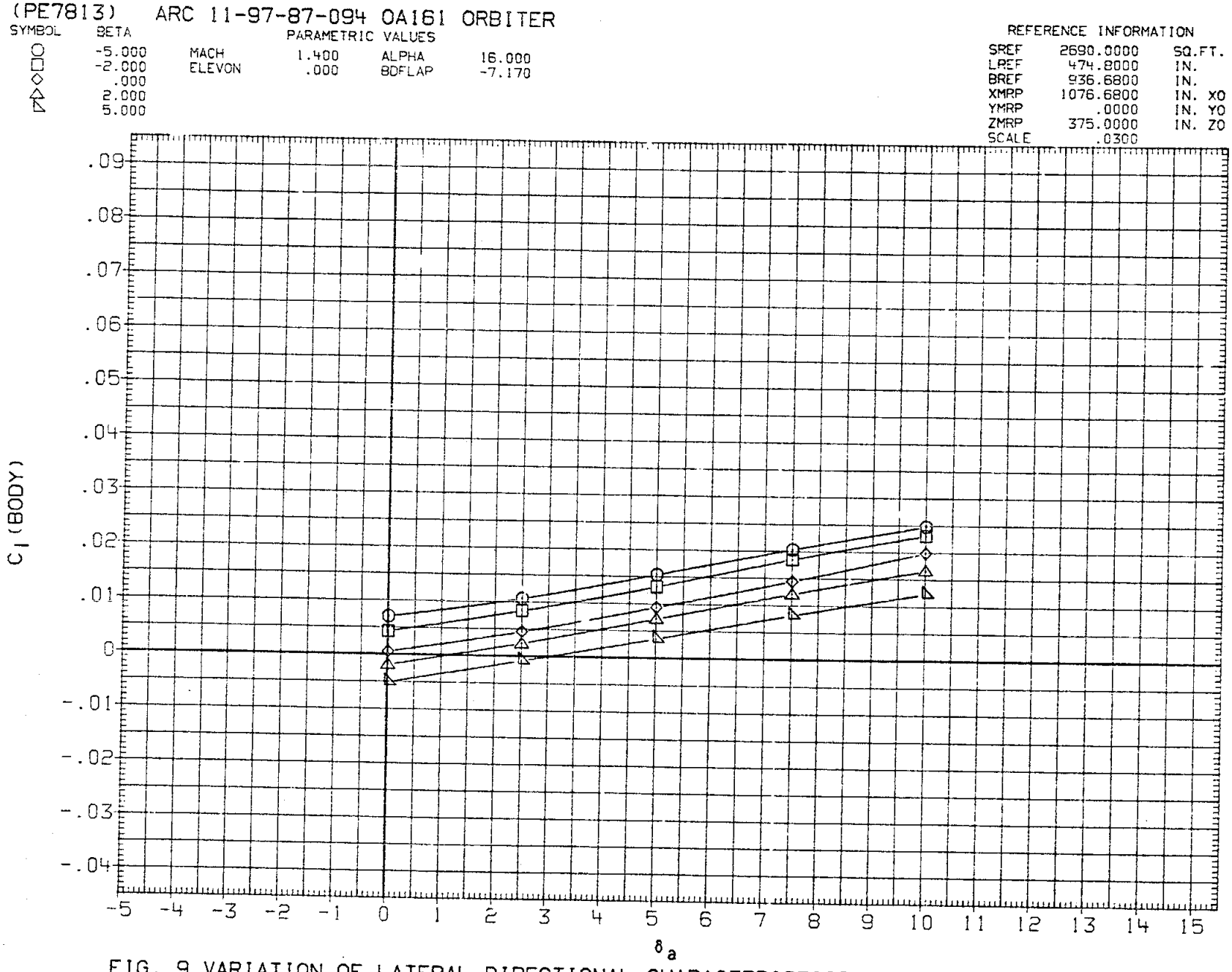


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

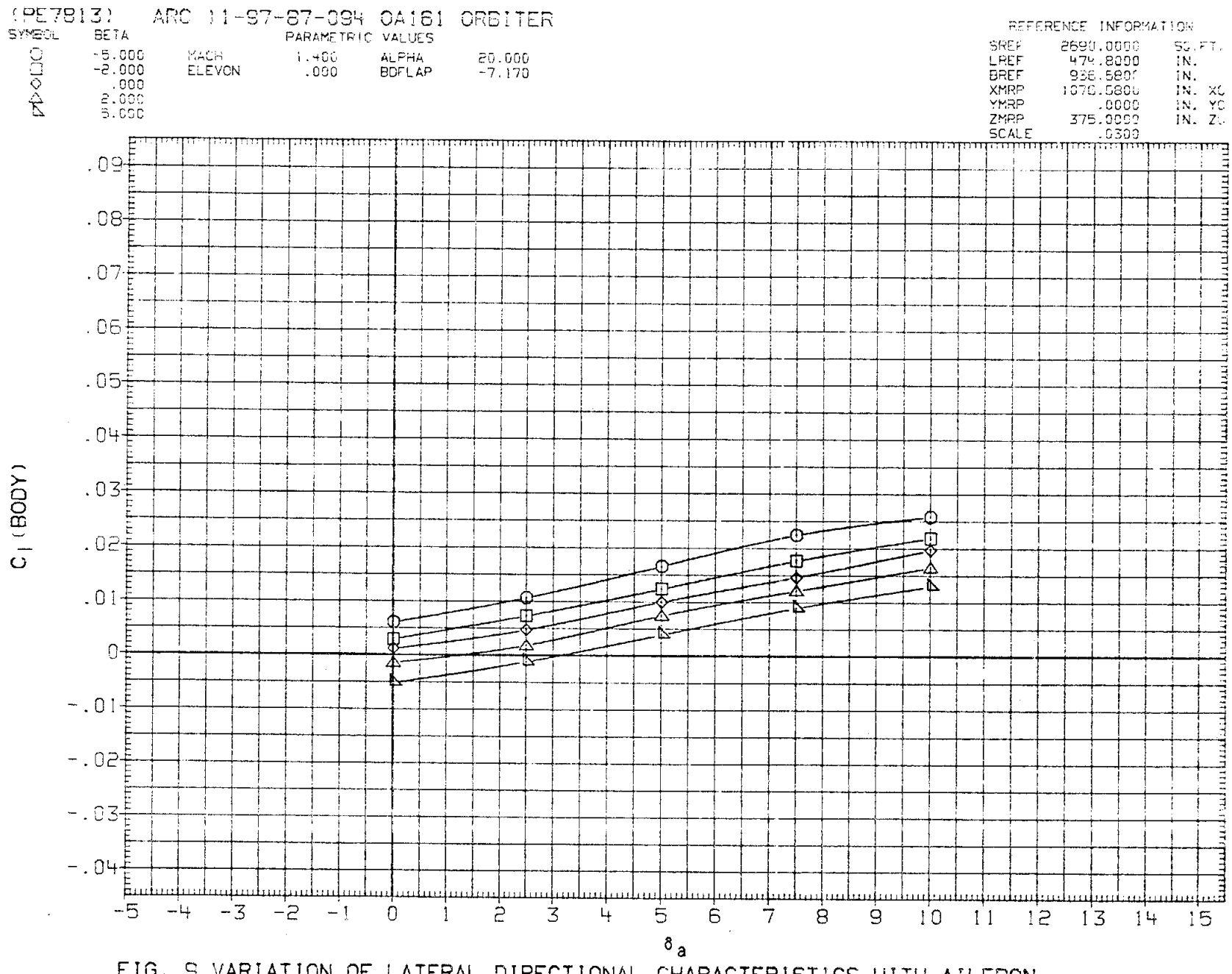


FIG. 9 VARIATION OF LATERAL DIRECTIONAL CHARACTERISTICS WITH AILERON

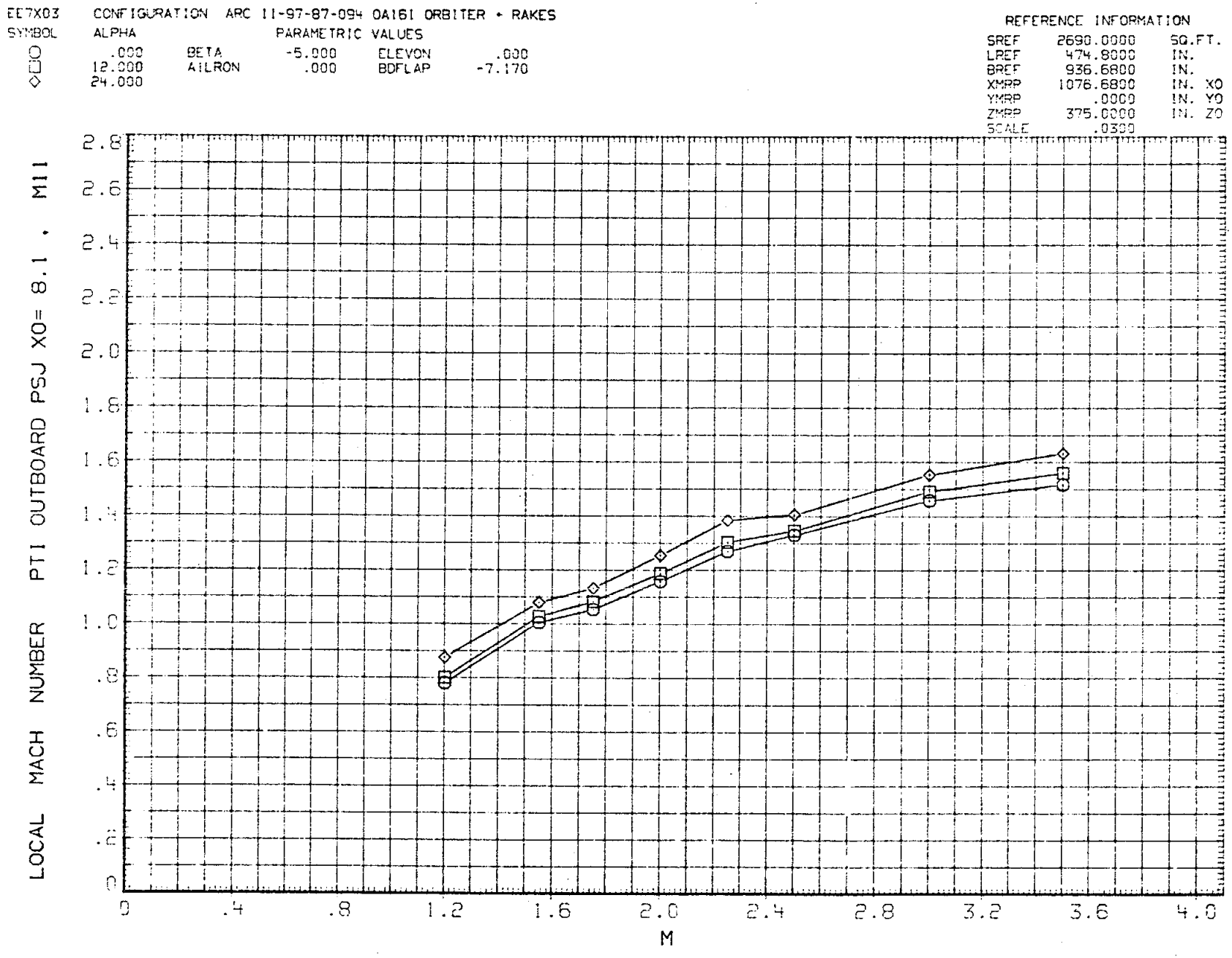


FIG. 10 EFFECT OF ALPHA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

PE7X02 CONFIGURATION ARC 11-97-87-094 OA181 ORBITER - RAKES

SYMBOL	ALPHA		PARAMETRIC VALUES		
	.000	BETA	-5.000	ELEVON	.000
	12.000	AILRON	.000	BDFLAP	-7.170
	24.000				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

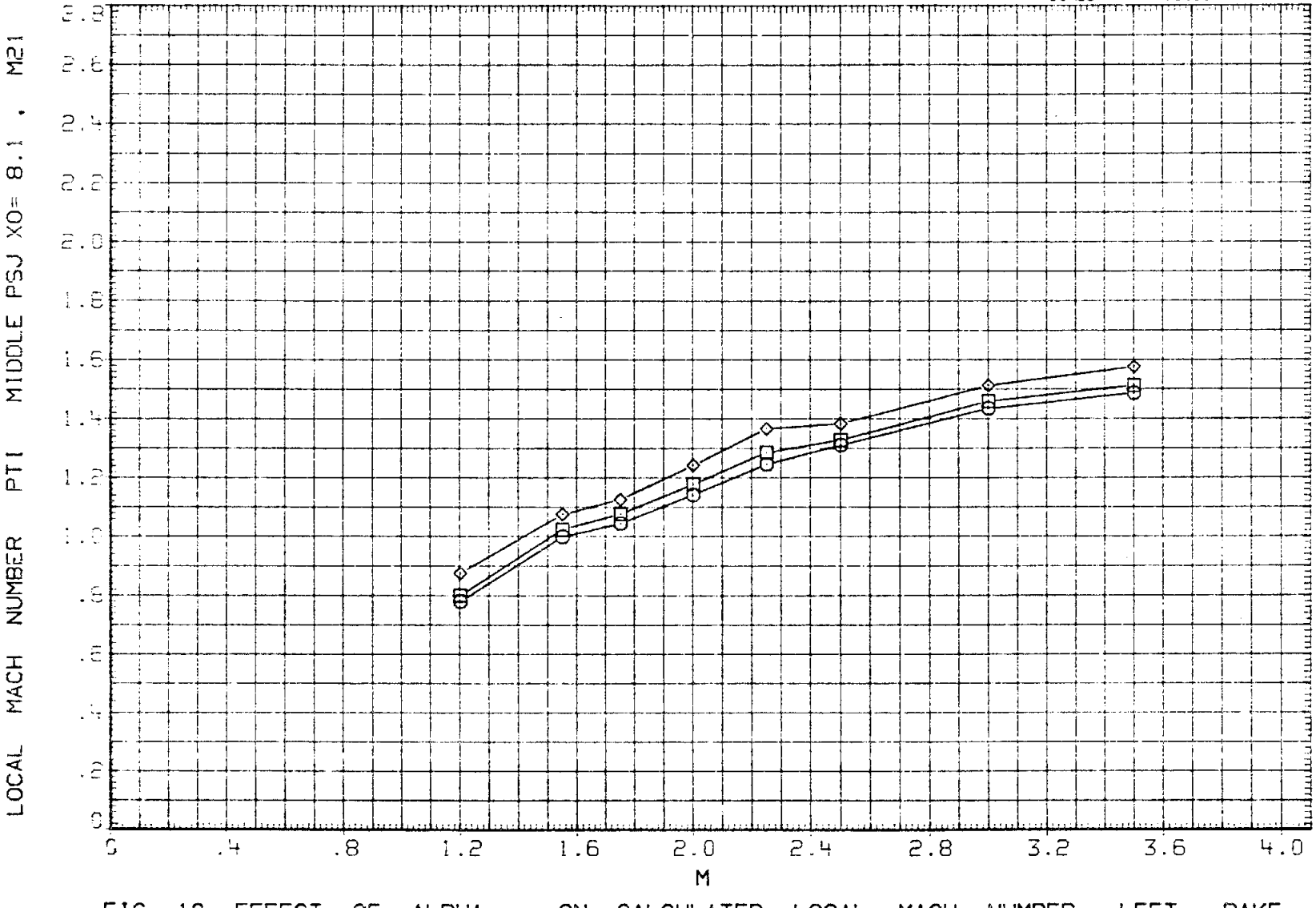


FIG. 10 EFFECT OF ALPHA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

EE7X02
SYMBOL

CONFIGURATION ARC 11-97-87-094 OA161 ORBITER + RAKES

ALPHA	PARAMETRIC VALUES			
.000	BETA	-5.000	ELEVON	.000
12.000	AILRON	.000	BDFLAP	-7.170
24.000				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

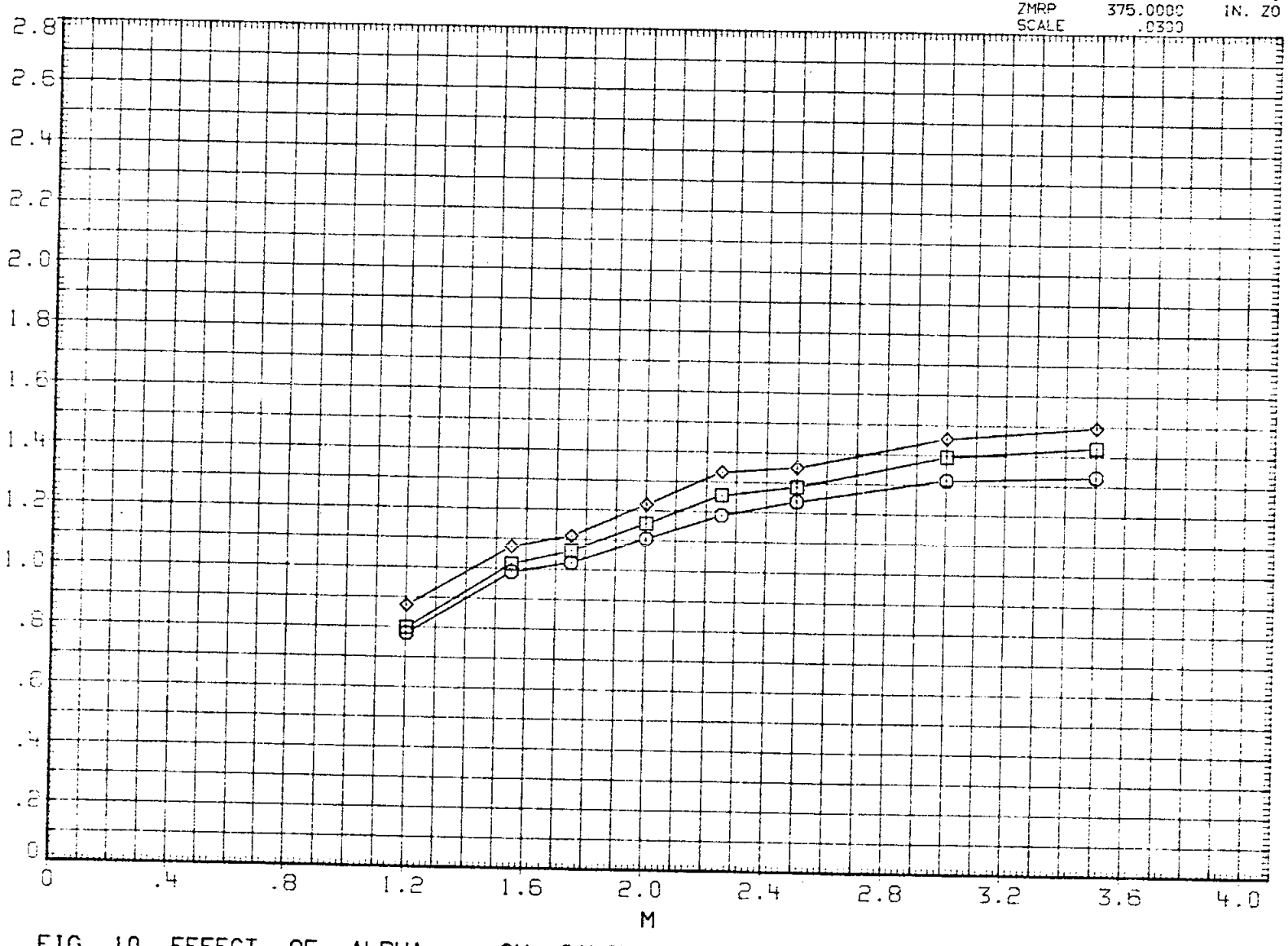


FIG. 10 EFFECT OF ALPHA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

EETX03 CONFIGURATION ARC 11-97-87-094 OA161 ORBITER + RAKES

SYMBOL ALPHA PARAMETRIC VALUES

◇	.000	BETA	-5.000	ELEVON	.000
□	12.000	AILRON	.000	BDFLAP	-7.170
○	24.000				

REFERENCE INFORMATION

SREF	2590.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

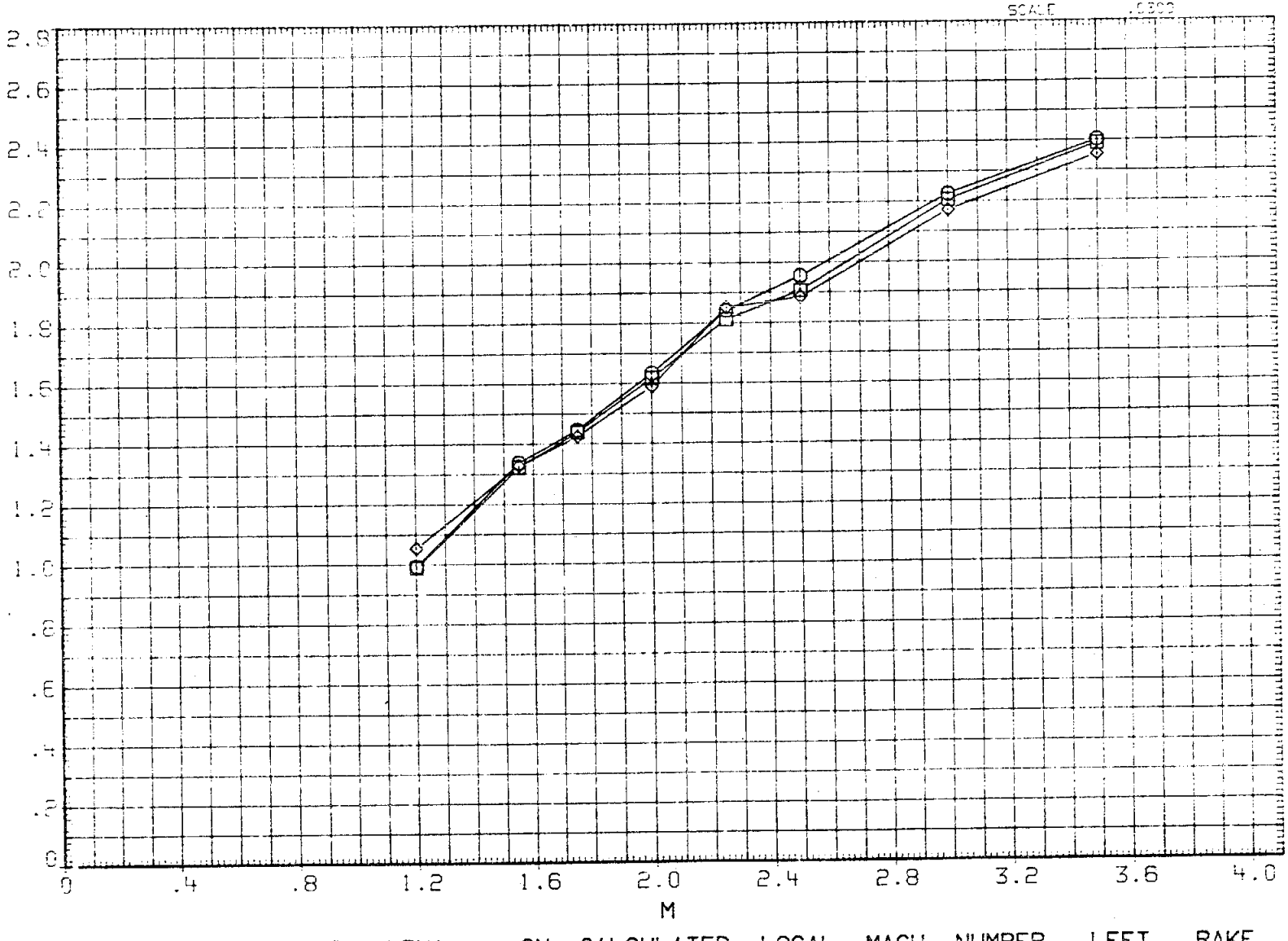


FIG. 10 EFFECT OF ALPHA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

EETX03 CONFIGURATION ARC II-97-87-094 OA161 ORBITER + RAKES

SYMBOL ALPHA PARAMETRIC VALUES

◇	.000	BETA	-5.000	ELEVON	.000
□	12.000	AILRON	.000	BDFLAP	-7.170
○	24.000				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

LOCAL MACH NUMBER PTI MIDDLE PSJ XO=12.9 , M23

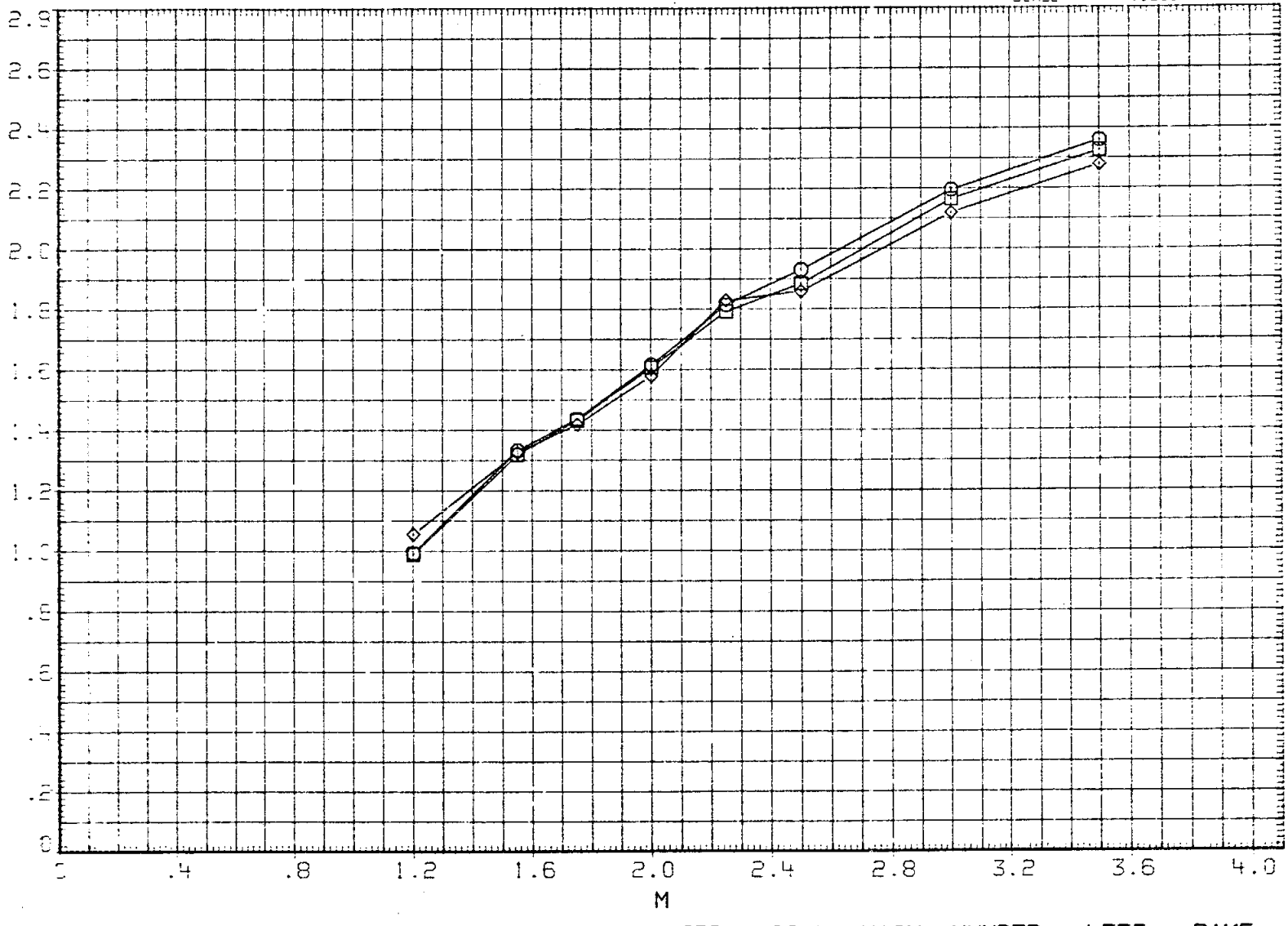


FIG. 10 EFFECT OF ALPHA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

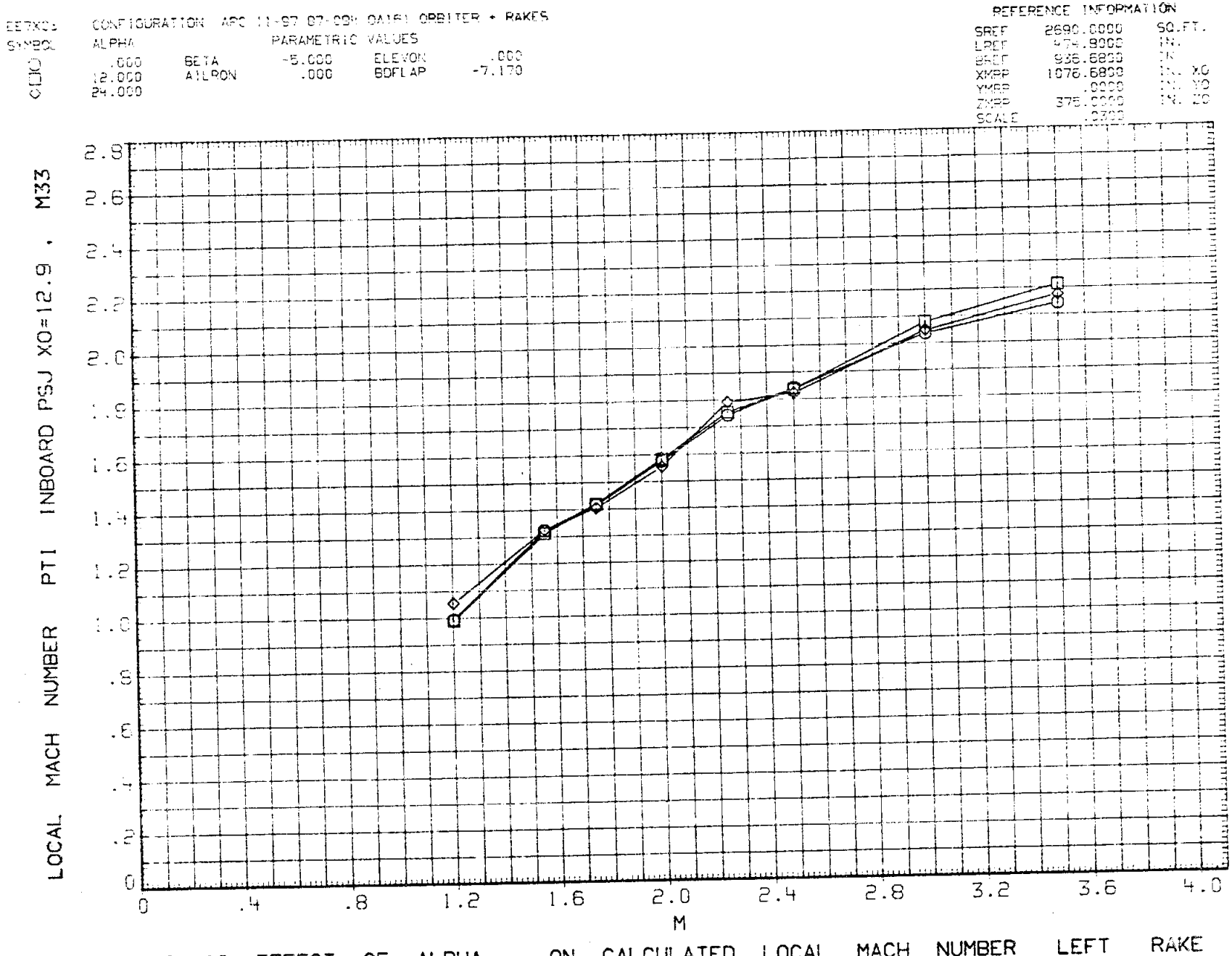


FIG. 10 EFFECT OF ALPHA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

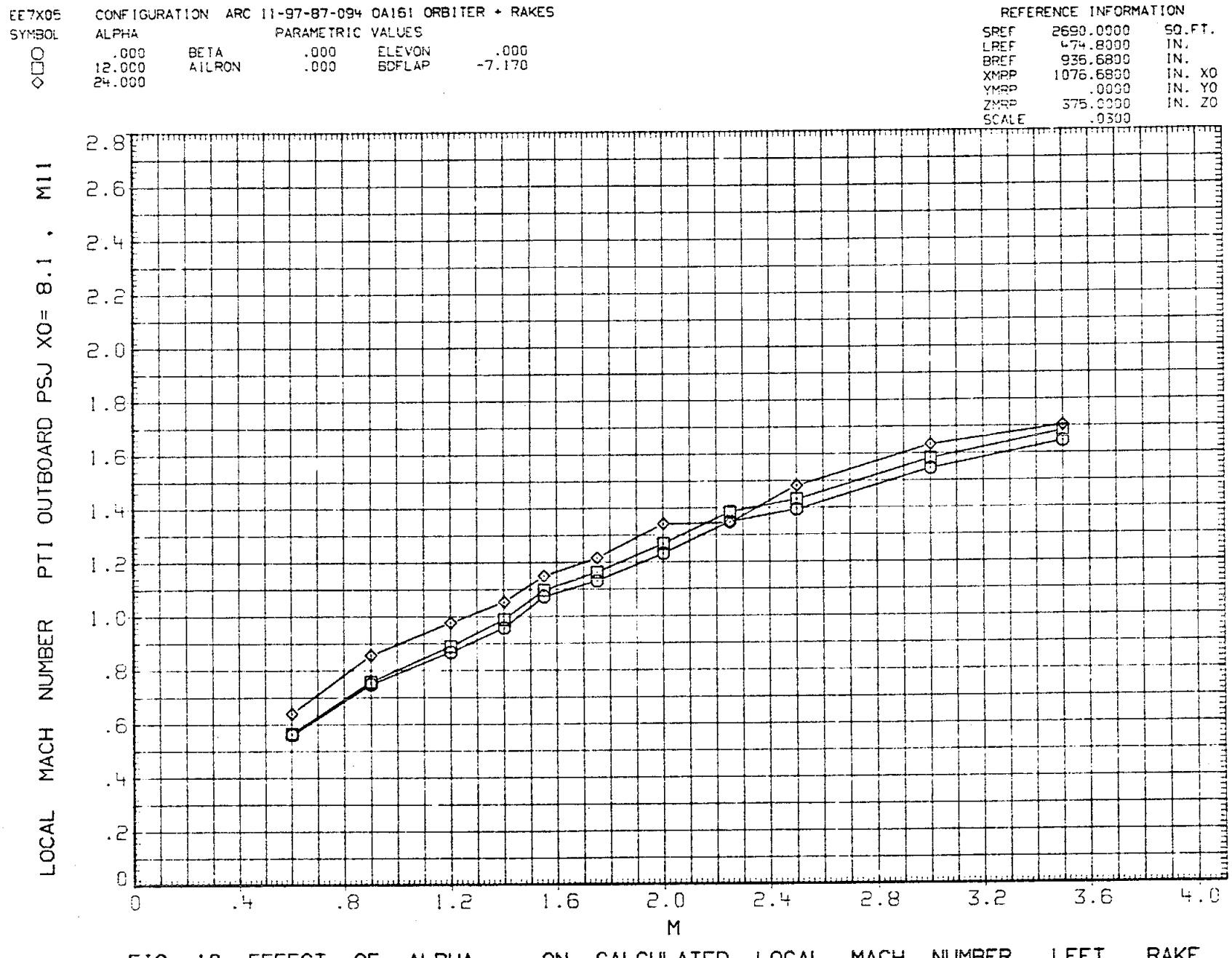


FIG. 10 EFFECT OF ALPHA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

EE7X05 CONFIGURATION ARC 11-97-87-084 OA161 ORBITER + RAKES

SYMBOL ALPHA PARAMETRIC VALUES

◇	.000	BETA	.000	ELEVON	.000
□	12.000	AILRON	.000	BDFLAP	-7.170
○	24.000				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

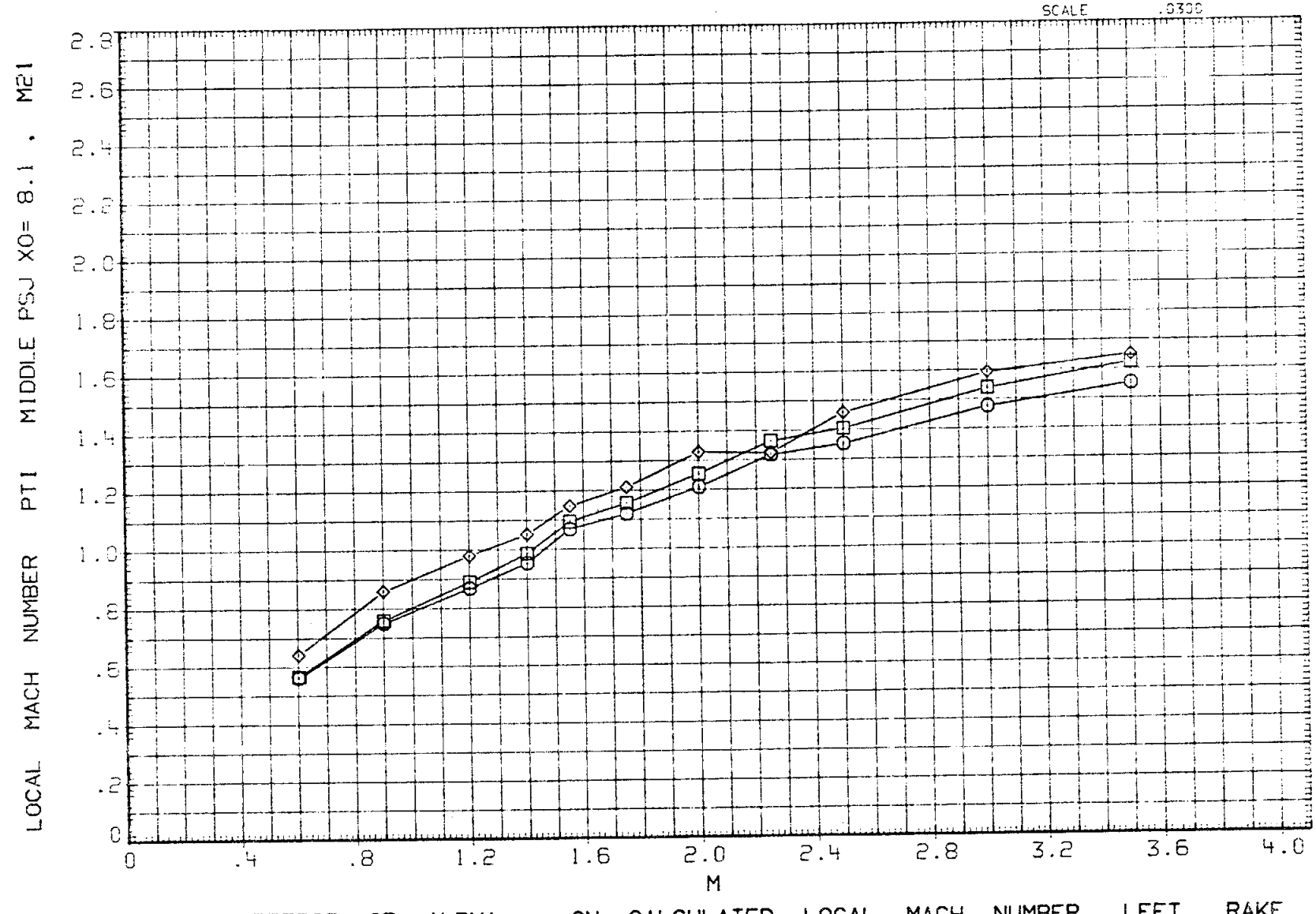


FIG. 10 EFFECT OF ALPHA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

EE7X05 CONFIGURATION ARC 11-97-87-094 OA161 ORBITER + RAKES

SYMBOL	ALPHA	PARAMETRIC VALUES			
◇□○	.000	BETA	.000	ELEVON	.000
	12.000	AILRON	.000	BDFLAP	-7.170
	24.000				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

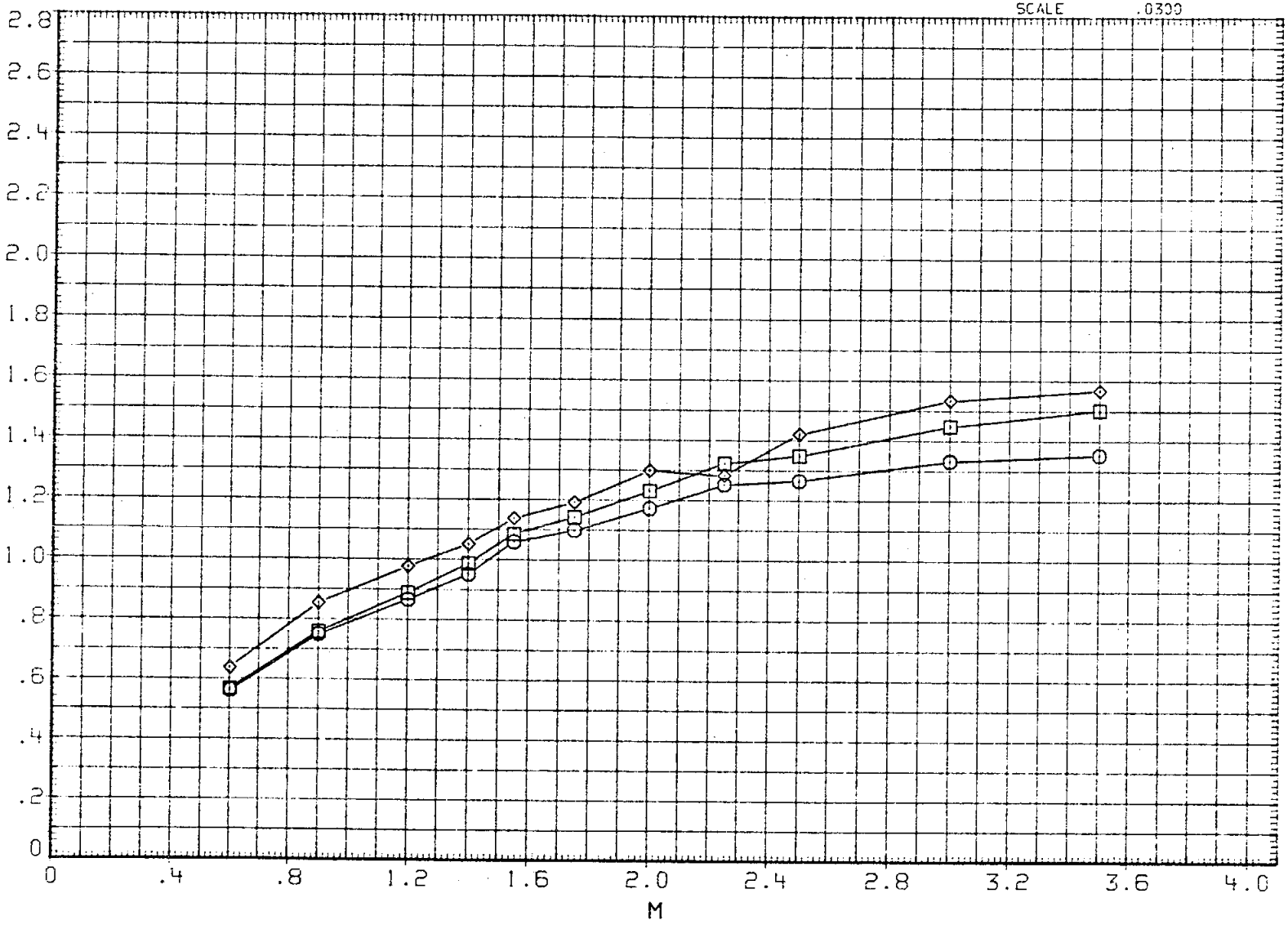


FIG. 10 EFFECT OF ALPHA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

EE7X05 CONFIGURATION ARC 11-97-87-094 DATA ORBITER + RAKES

SYMBOL ALPHA PARAMETRIC VALUES

◇□○ .000 BETA .000 ELEVON .000
12.000 AILRON .000 BDFLAP -7.170
24.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

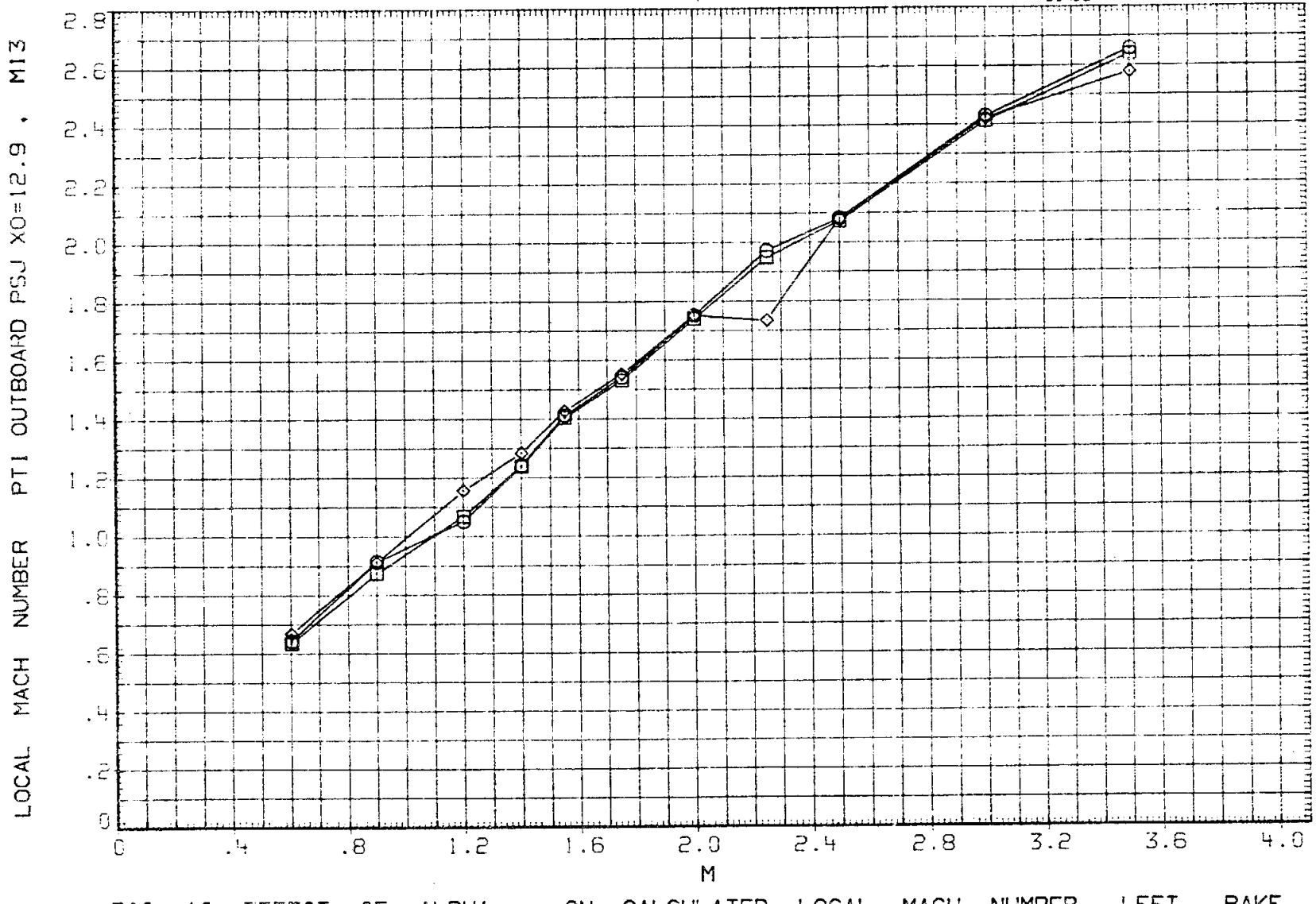


FIG. 10 EFFECT OF ALPHA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

EE7X05 CONFIGURATION ARC 11-97-87-094 OA161 ORBITER + RAKES

SYMBOL	ALPHA	PARAMETRIC VALUES				
◇□○	.000	BETA	.000	ELEVON	.000	
	12.000	AILRON	.000	BDFLAP	-7.170	
	24.000					

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

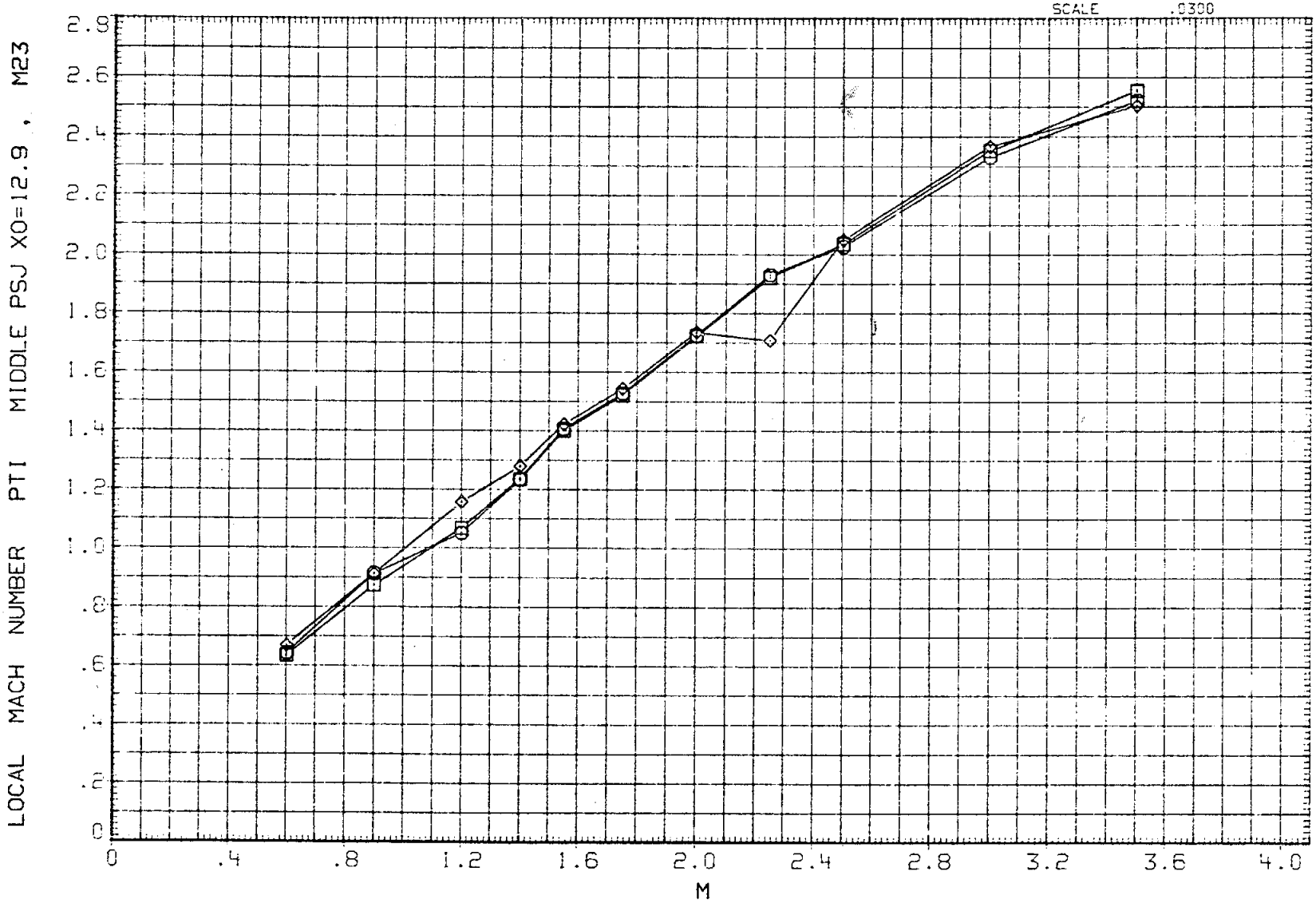


FIG. 10 EFFECT OF ALPHA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

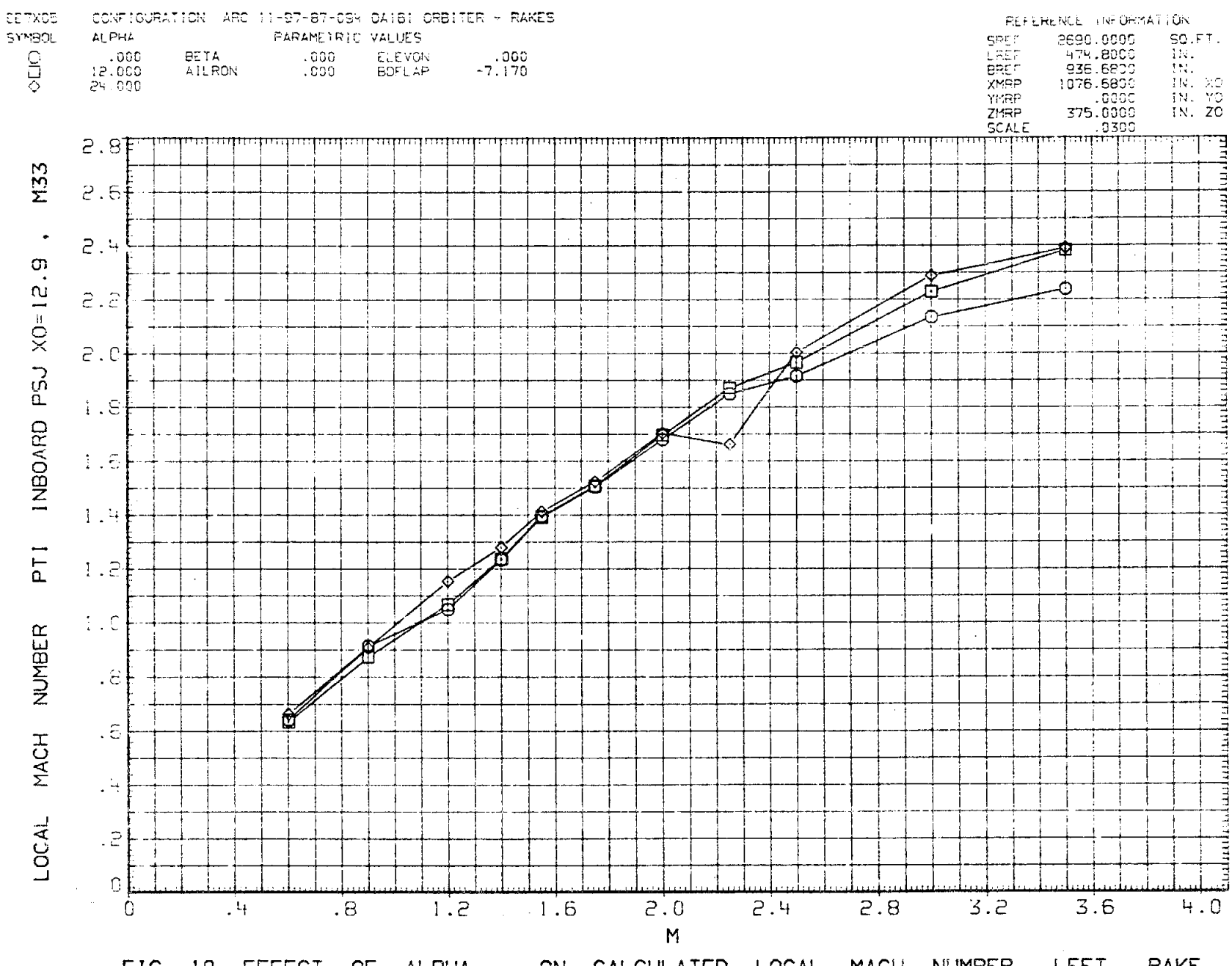


FIG. 10 EFFECT OF ALPHA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

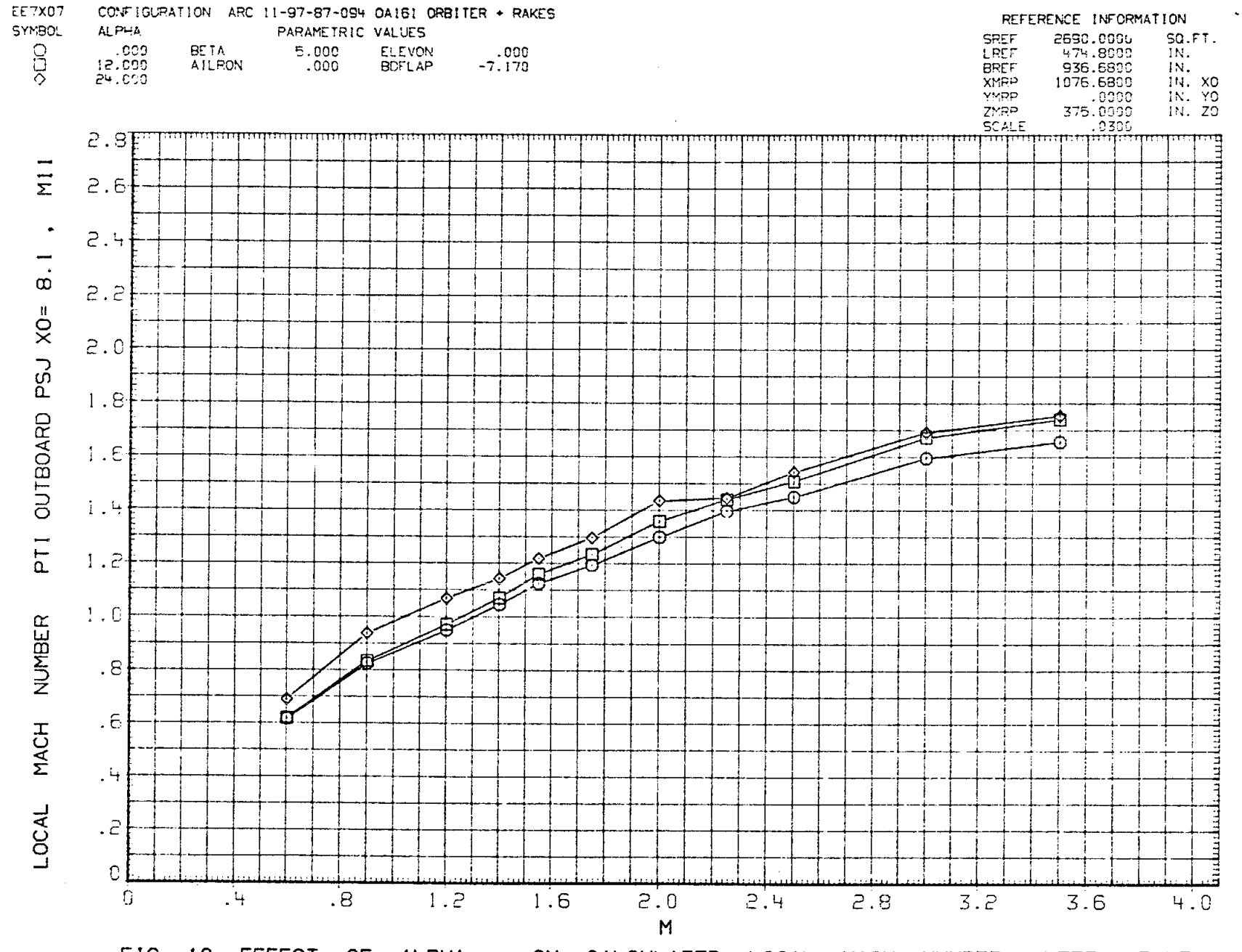


FIG. 10 EFFECT OF ALPHA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

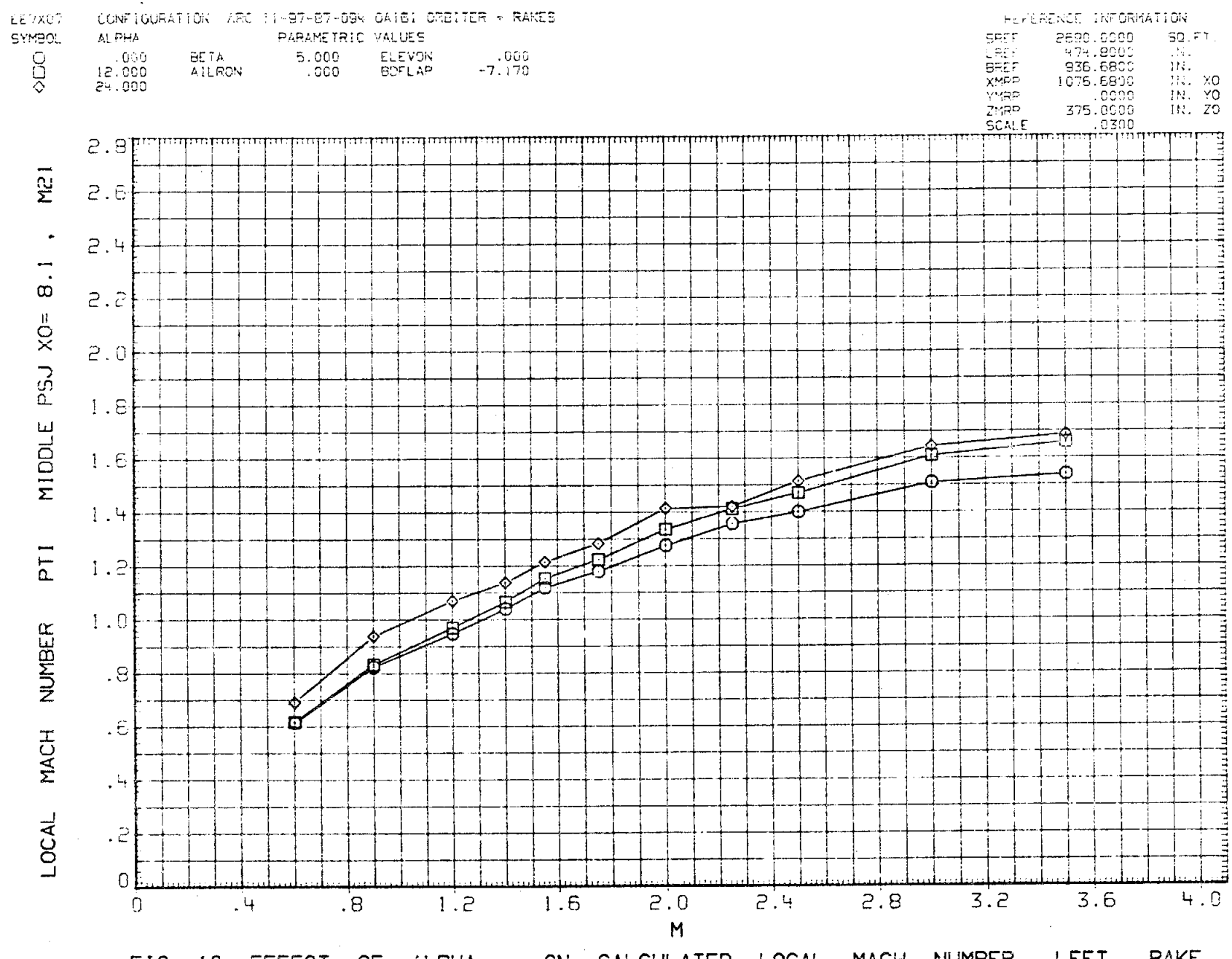


FIG. 10 EFFECT OF ALPHA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

EE7X07 CONFIGURATION ARC 11-97-87-094 OA161 ORBITER + RAKES

SYMBOL	ALPHA		PARAMETRIC VALUES		
◇	.000	BETA	5.000	ELEVON	.000
□	12.000	AILRON	.000	BDFLAP	-7.170
○	24.000				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

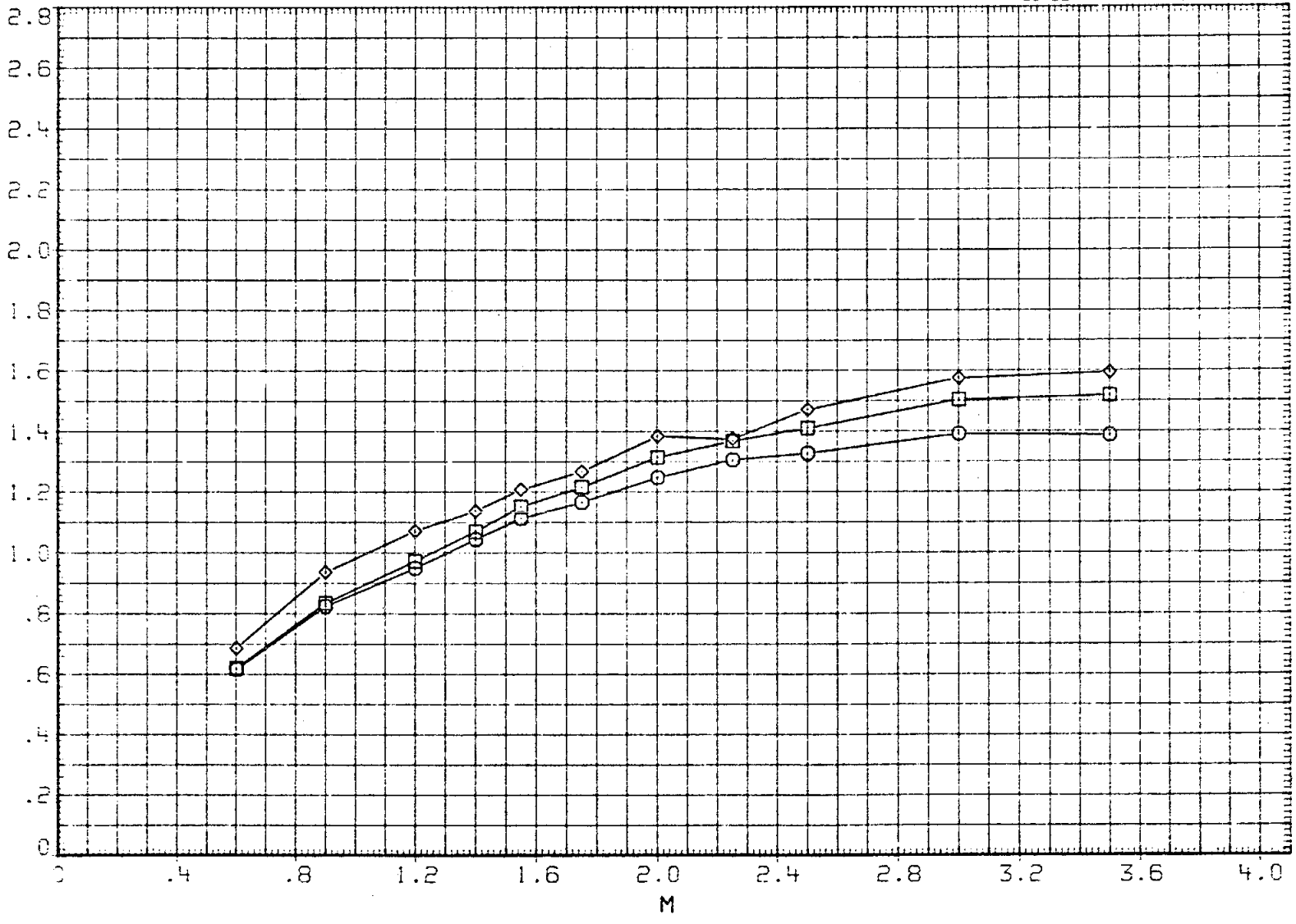


FIG. 10 EFFECT OF ALPHA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

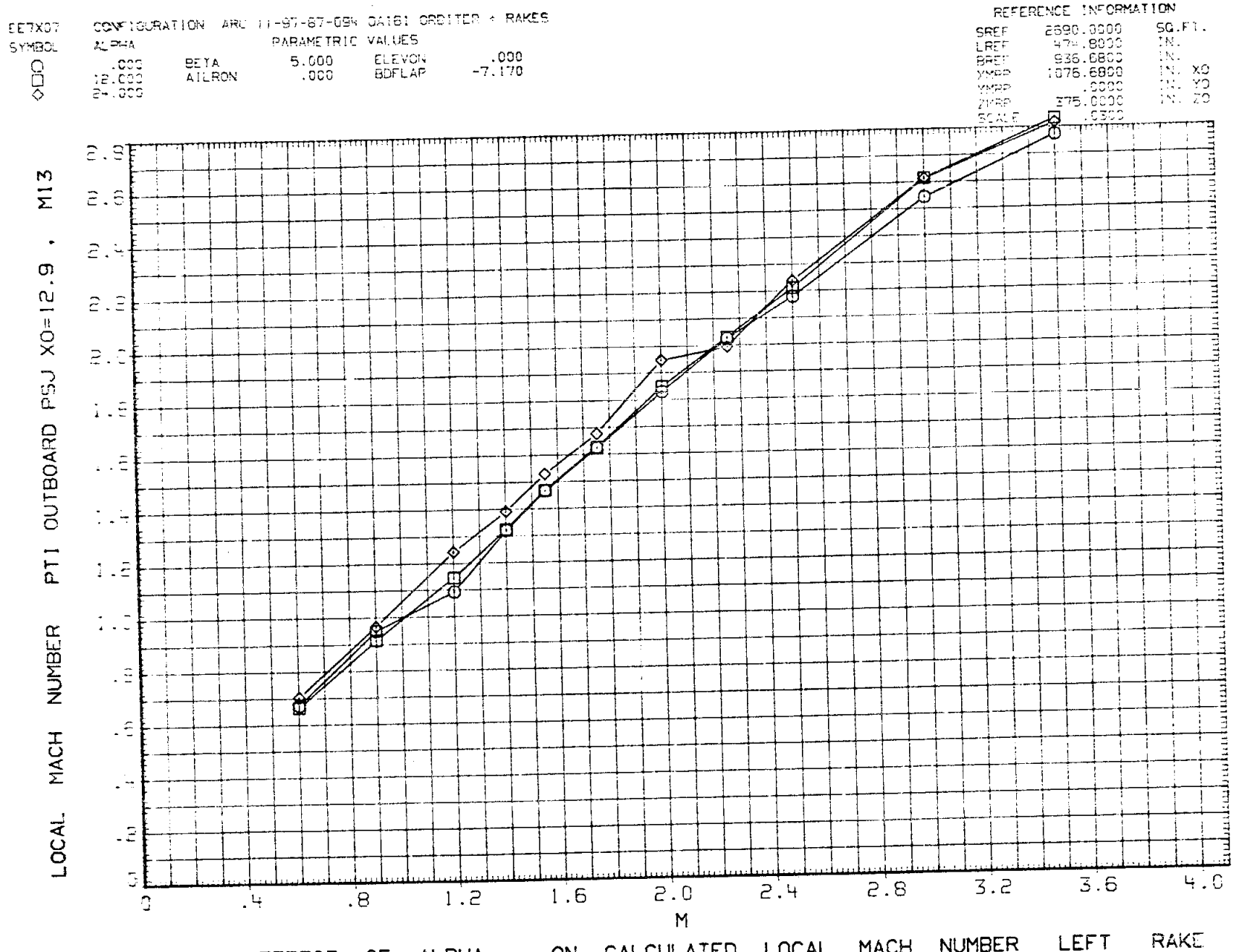


FIG. 10 EFFECT OF ALPHA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

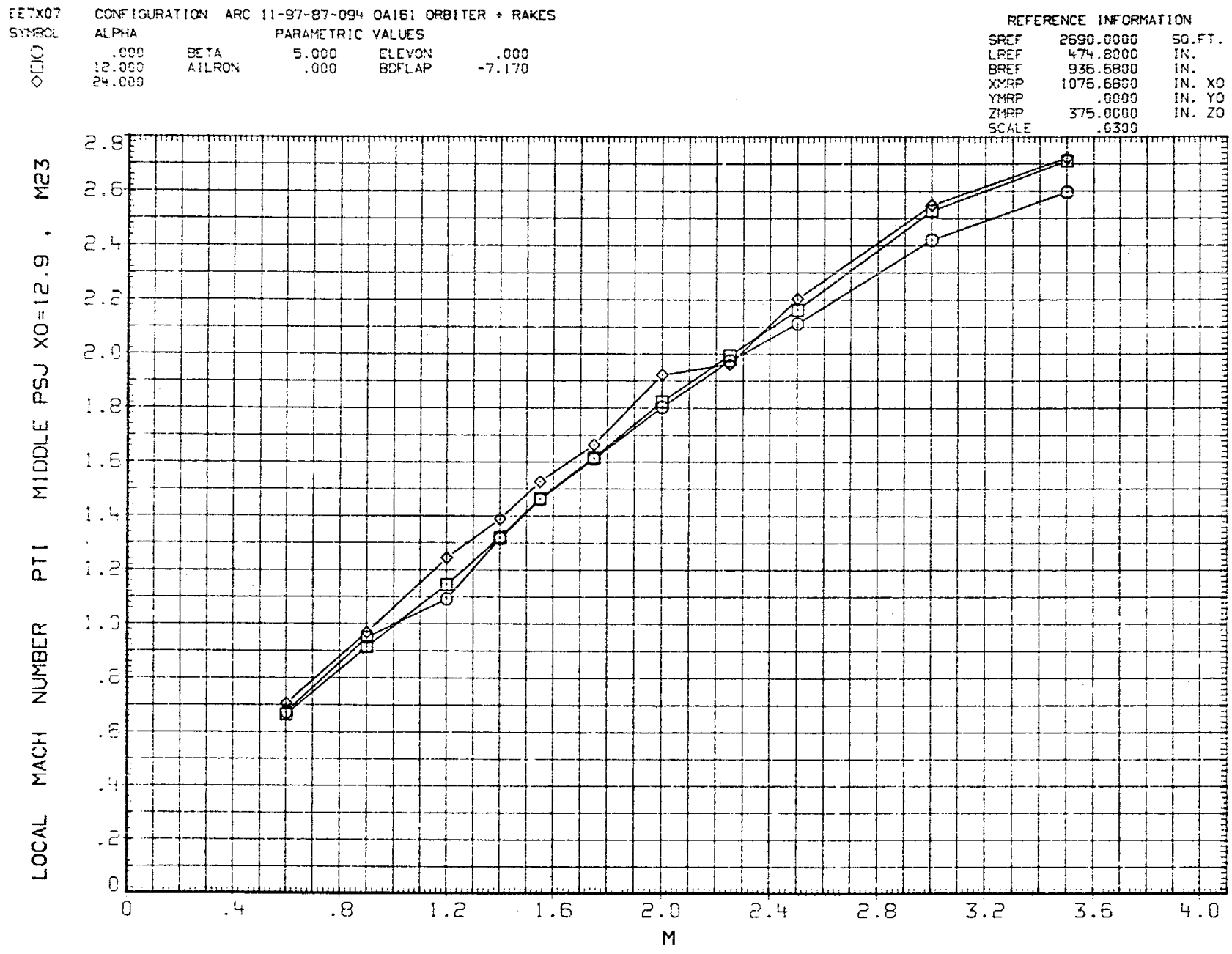


FIG. 10 EFFECT OF ALPHA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

EE7X07 CONFIGURATION ARC 11-87-87-09% OAIGI ORBITER + RAKES

SYMBOL ALPHA PARAMETRIC VALUES

◇ .000 BETA 5.000 ELEVON .000
□ 12.000 AILRON .000 BDFLAP -7.170
○ 24.000

REFERENCE INFORMATION

SREF	2680.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

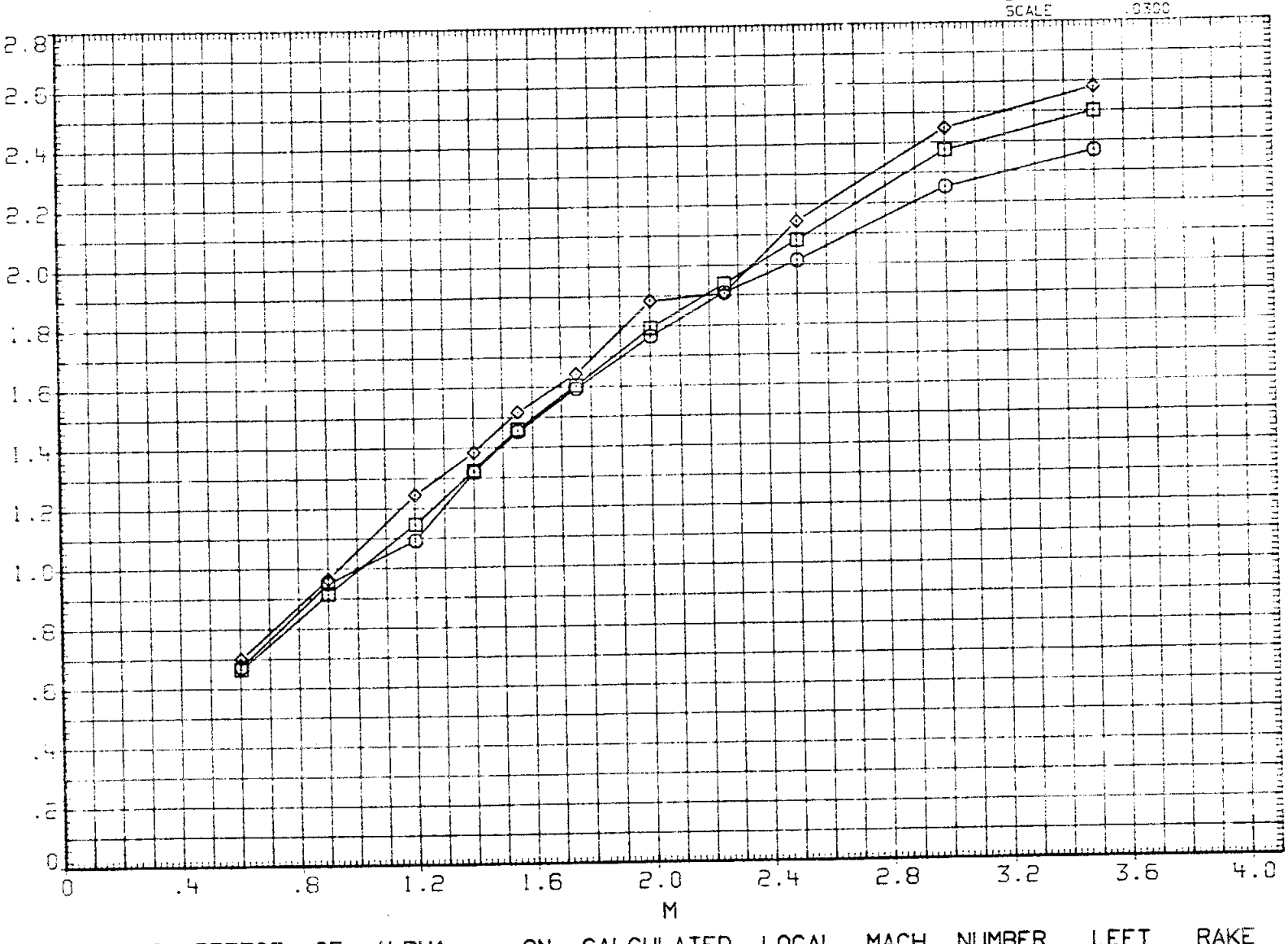


FIG. 10 EFFECT OF ALPHA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

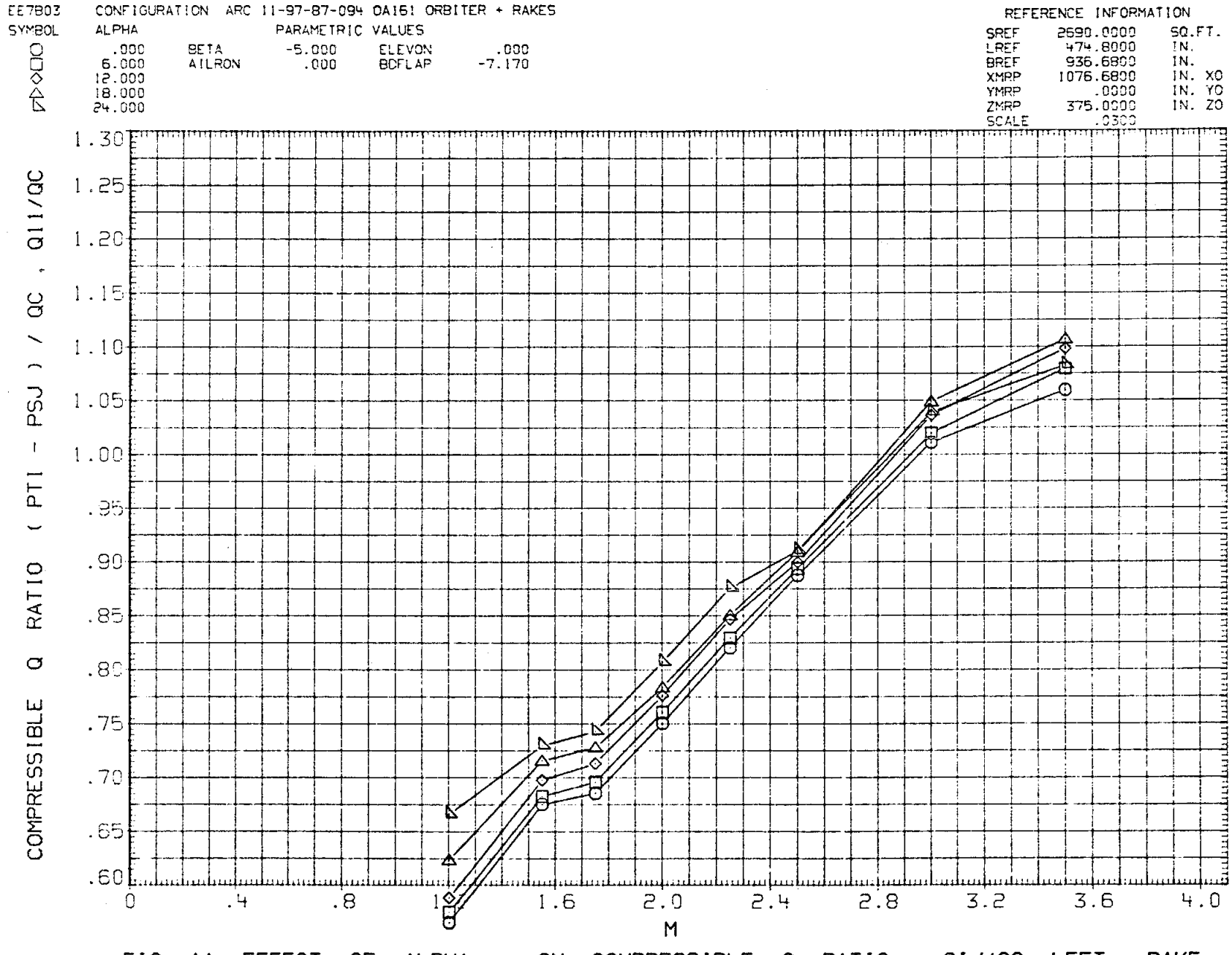


FIG. 11 EFFECT OF ALPHA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

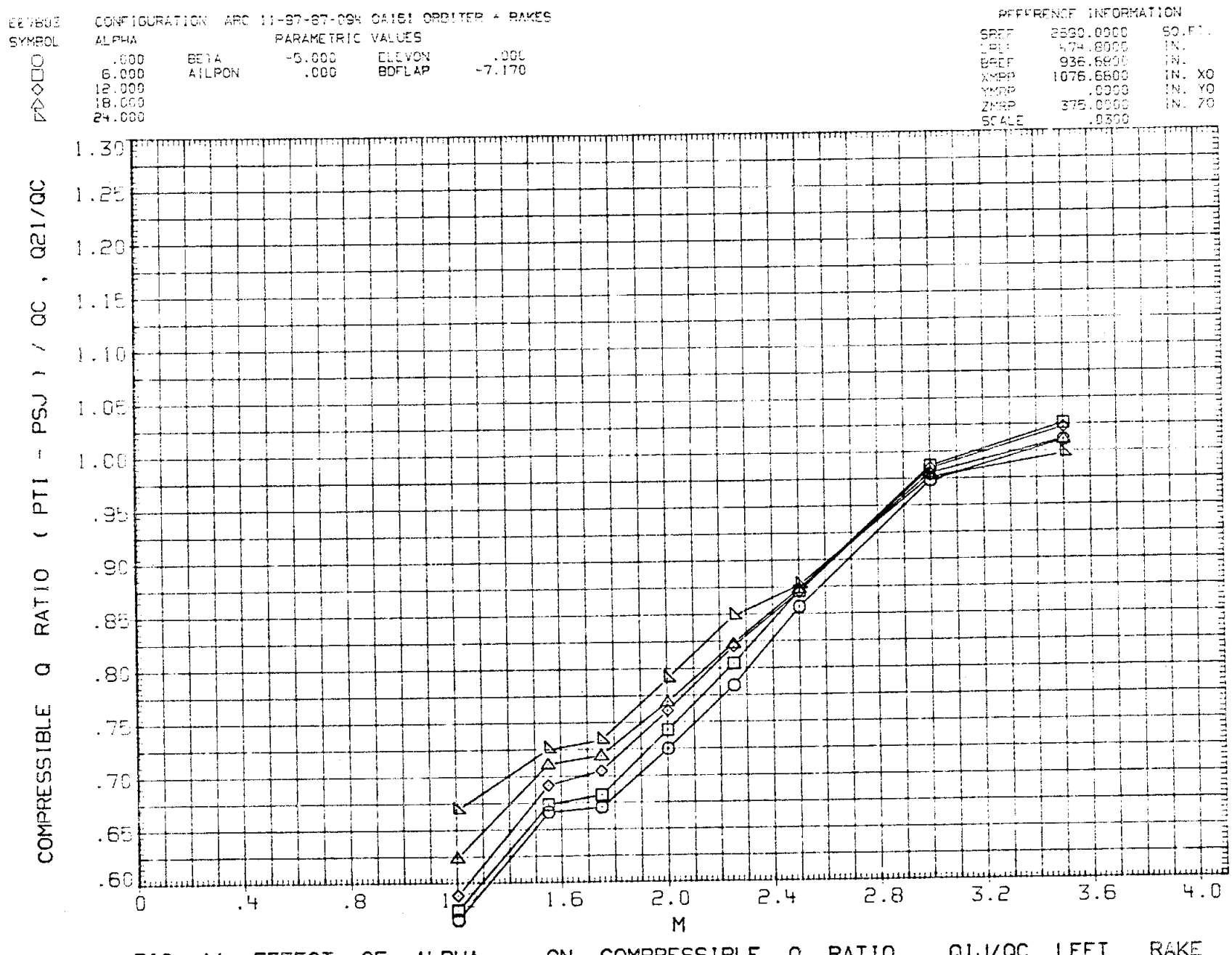


FIG. 11 EFFECT OF ALPHA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

CONFIGURATION ARC 11-97-87-094 OA161 ORBITER + RAKES

ALPHA

.000
6.000
12.000
18.000
24.000

PARAMETRIC VALUES

BETA	-5.000	ELEVON	.000
AILRON	.000	BDFLAP	-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	935.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

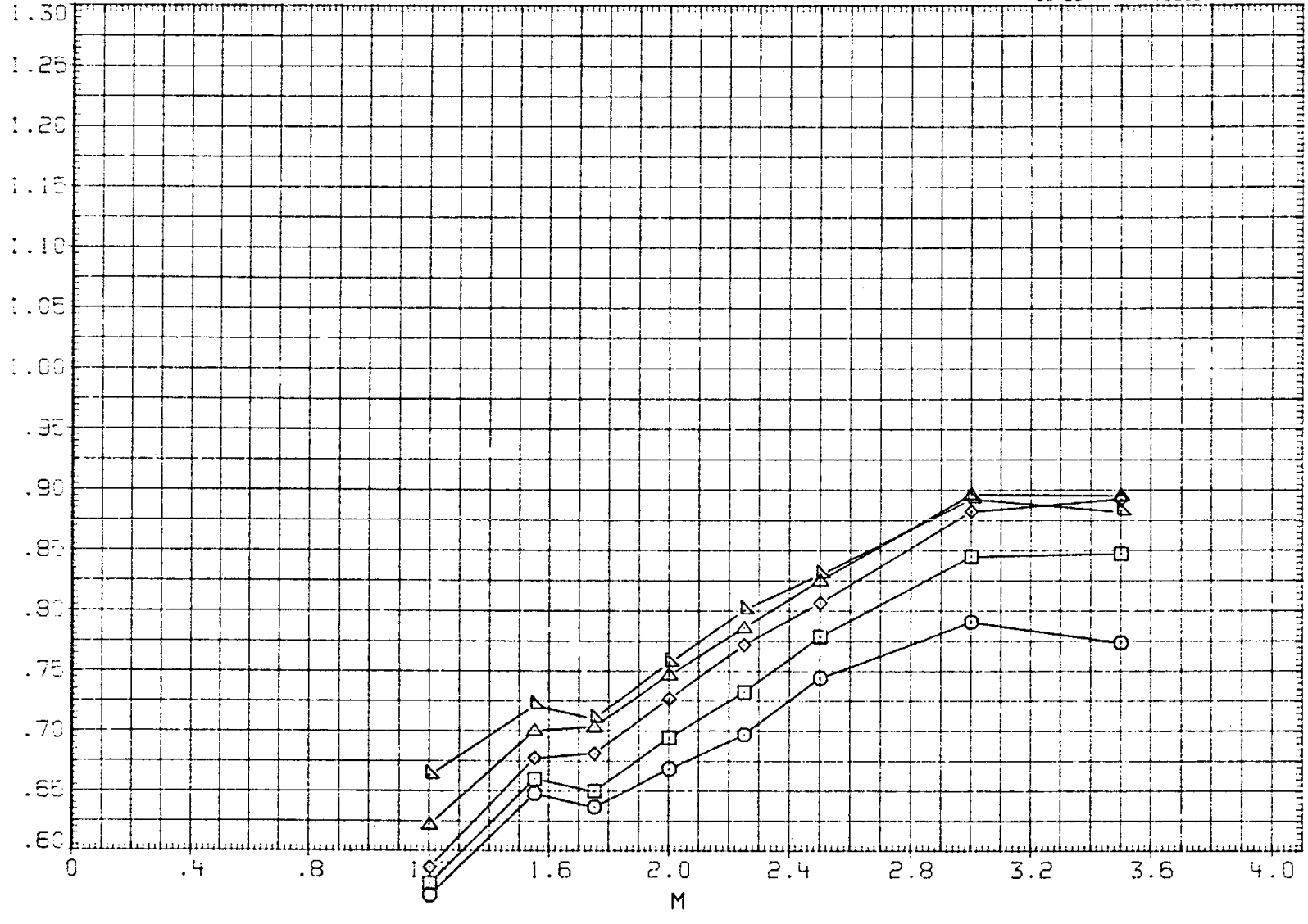


FIG. 11 EFFECT OF ALPHA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

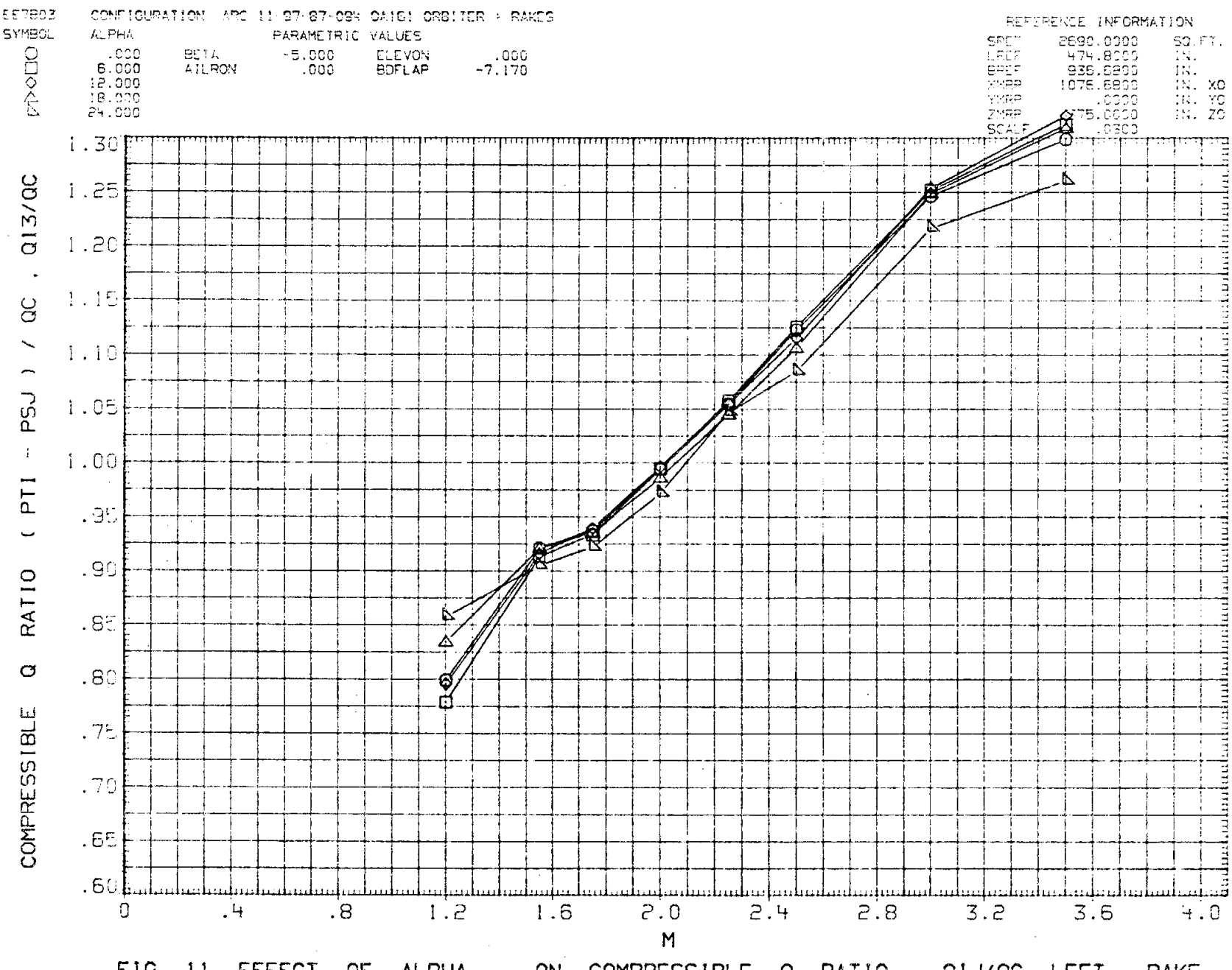


FIG. 11 EFFECT OF ALPHA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

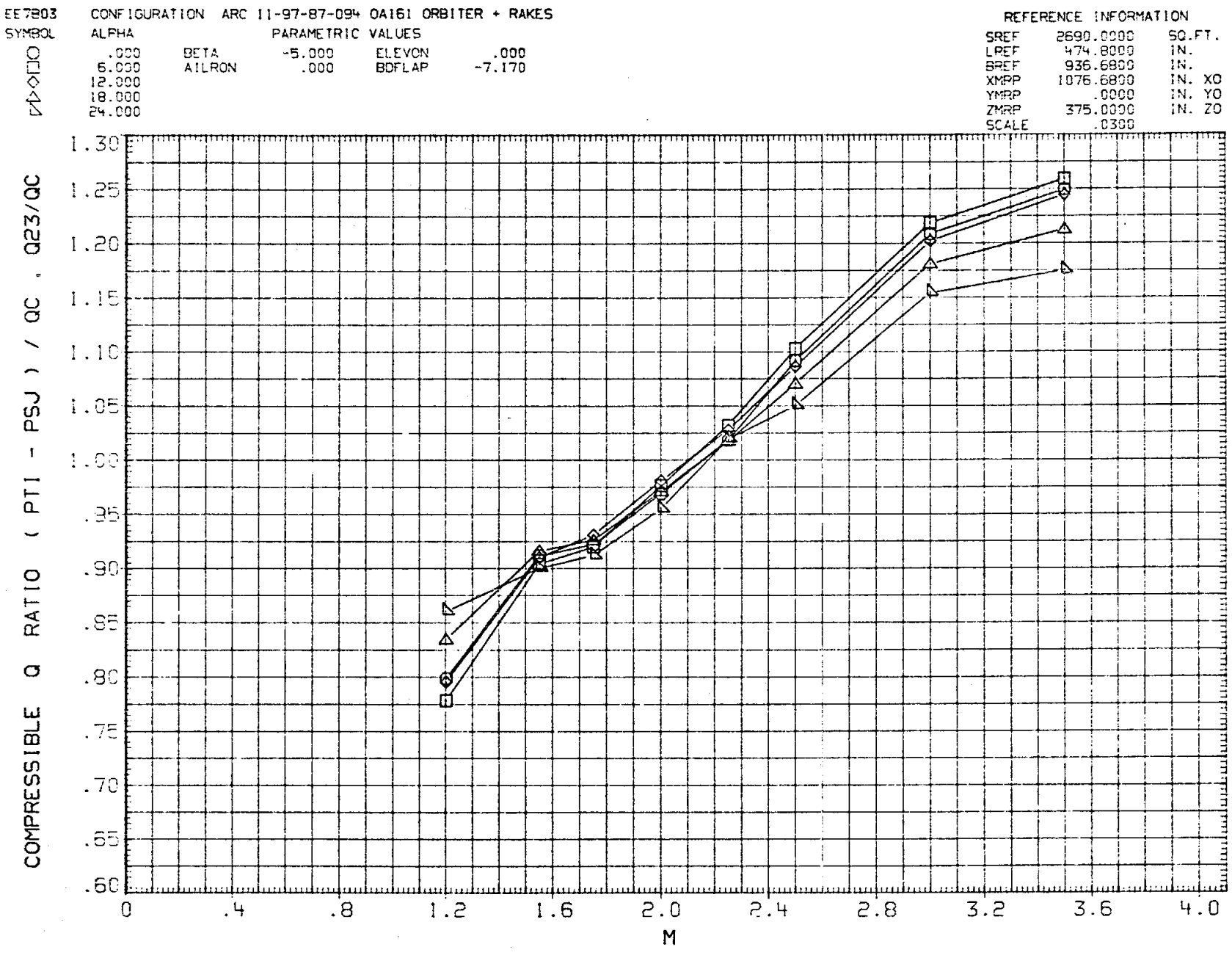


FIG. 11 EFFECT OF ALPHA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

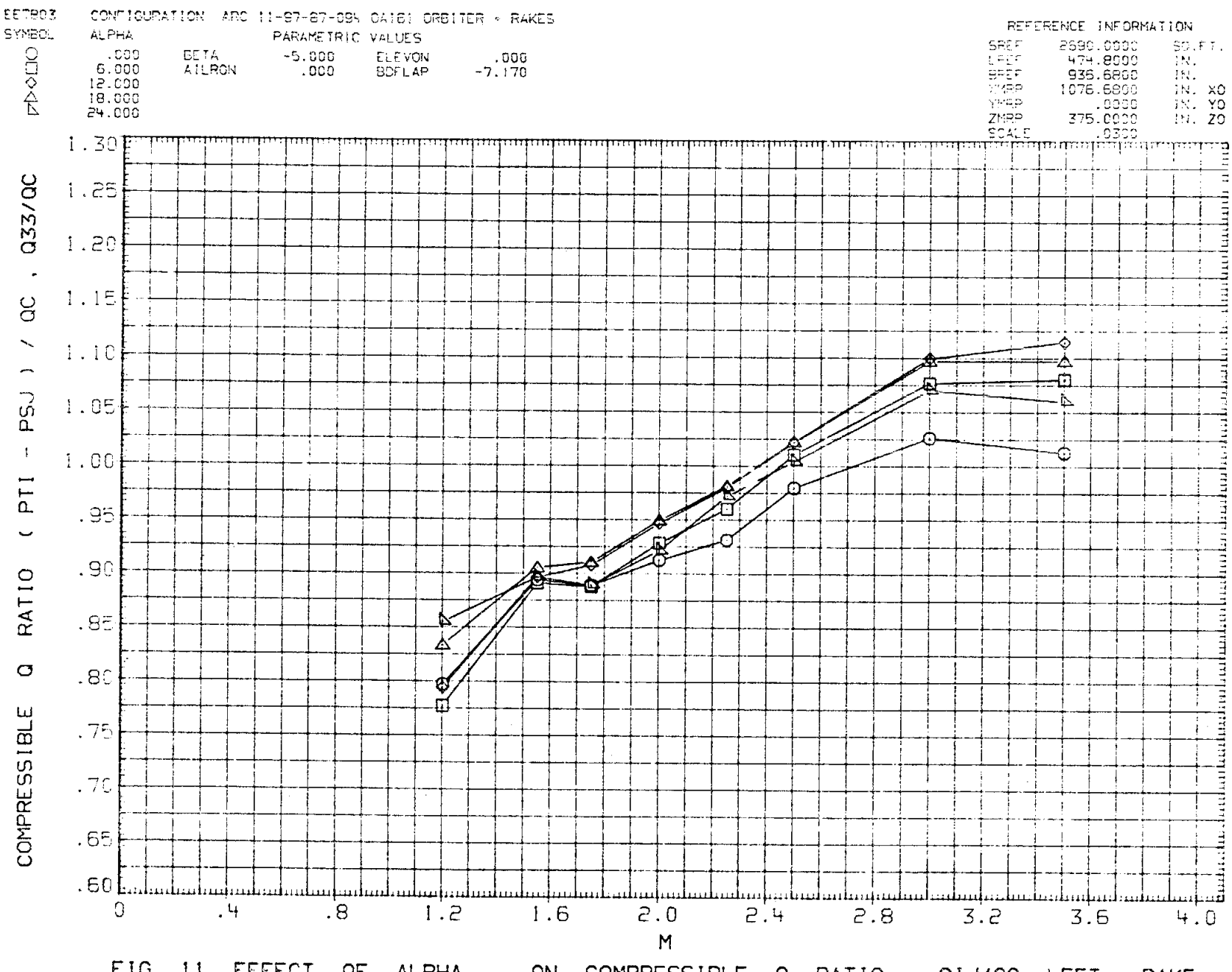


FIG. 11 EFFECT OF ALPHA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

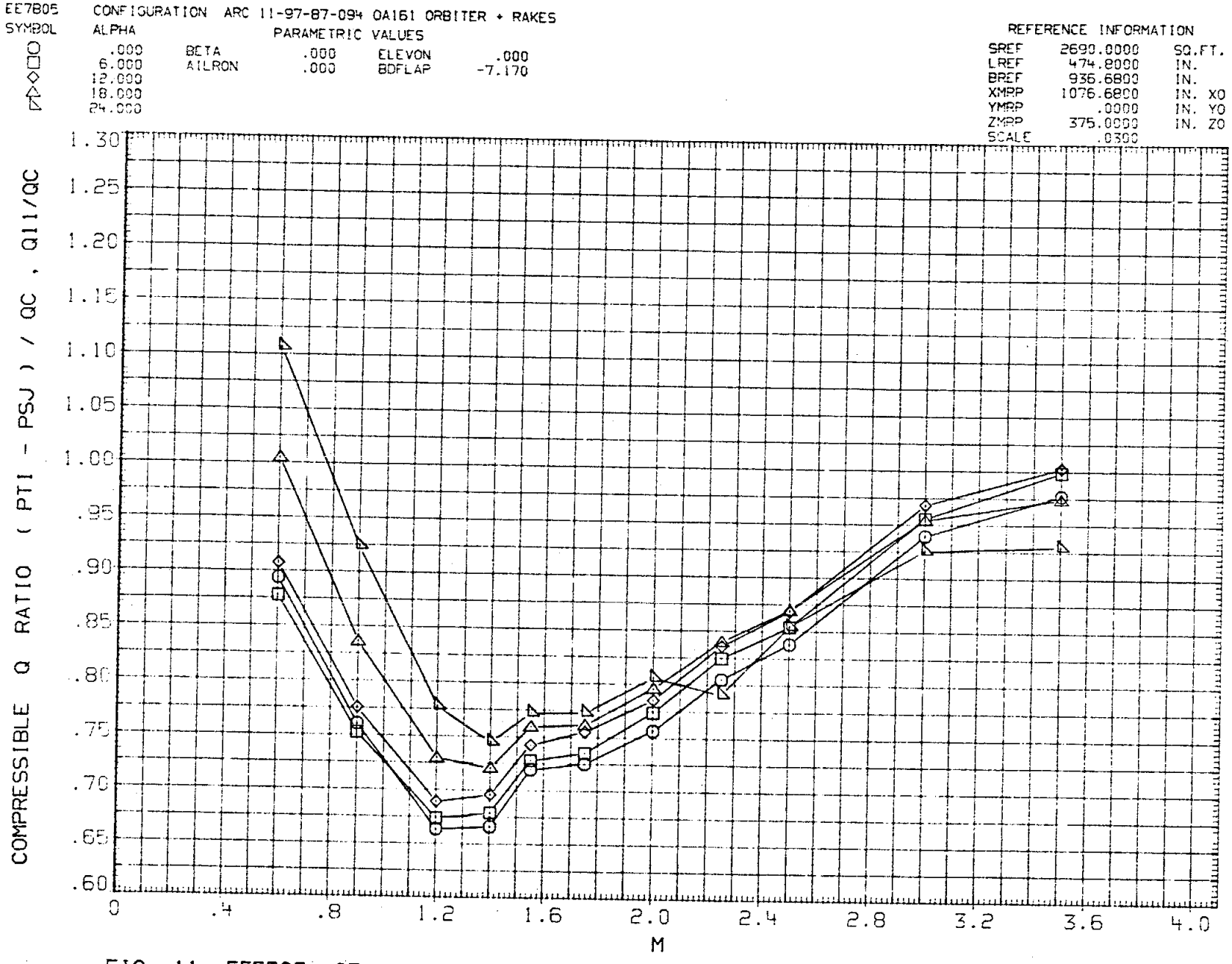


FIG. 11 EFFECT OF ALPHA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

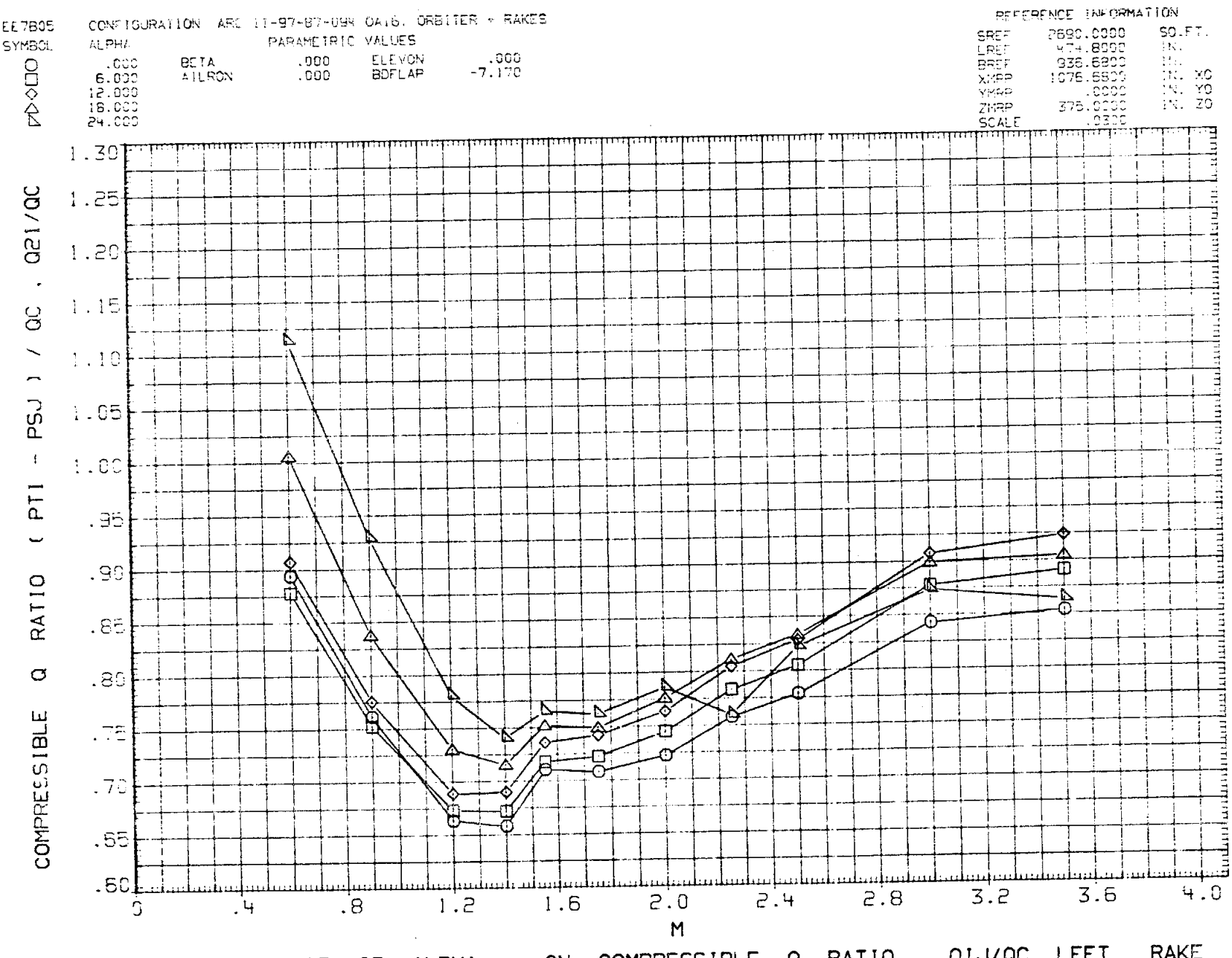


FIG. 11 EFFECT OF ALPHA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

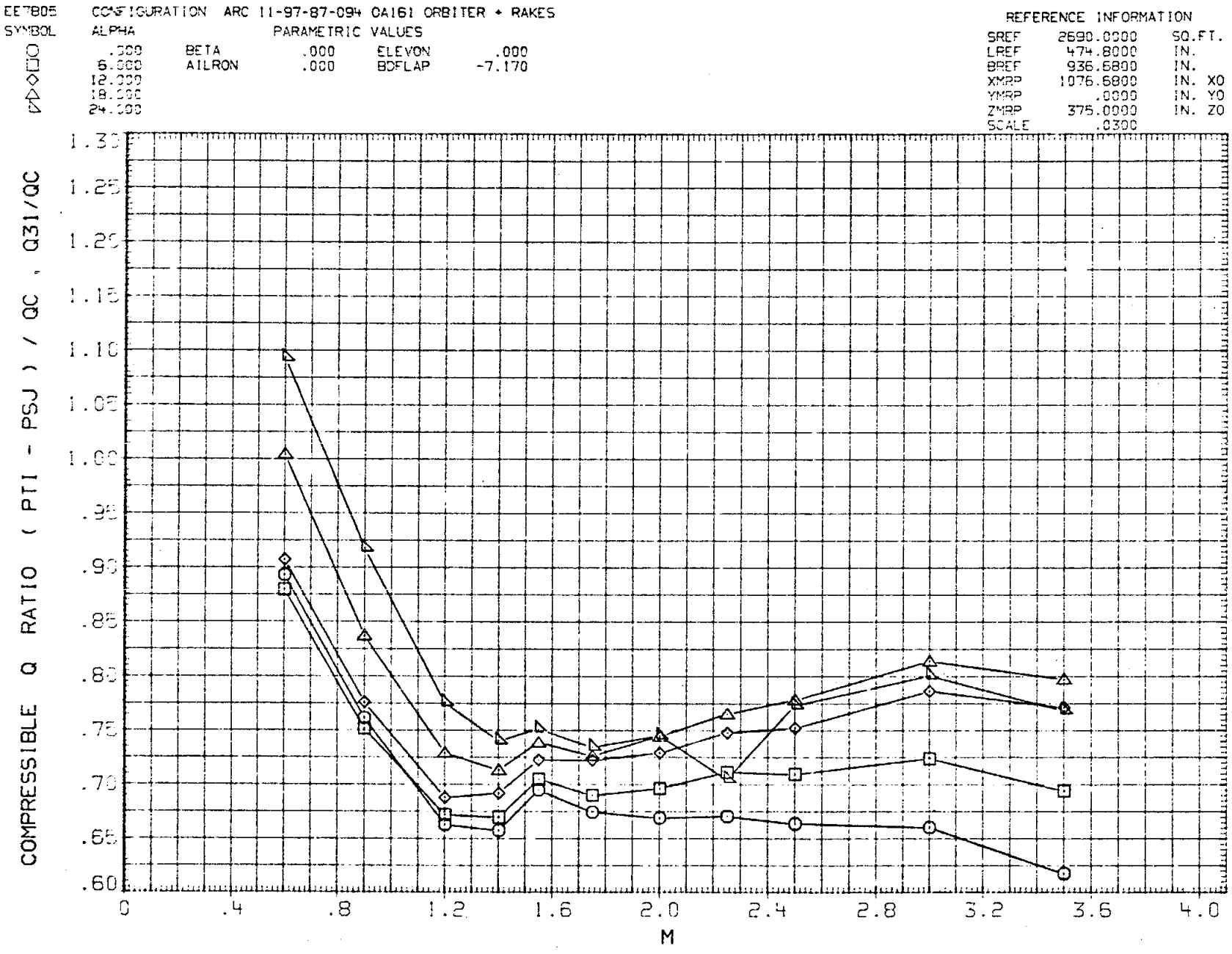


FIG. 11 EFFECT OF ALPHA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

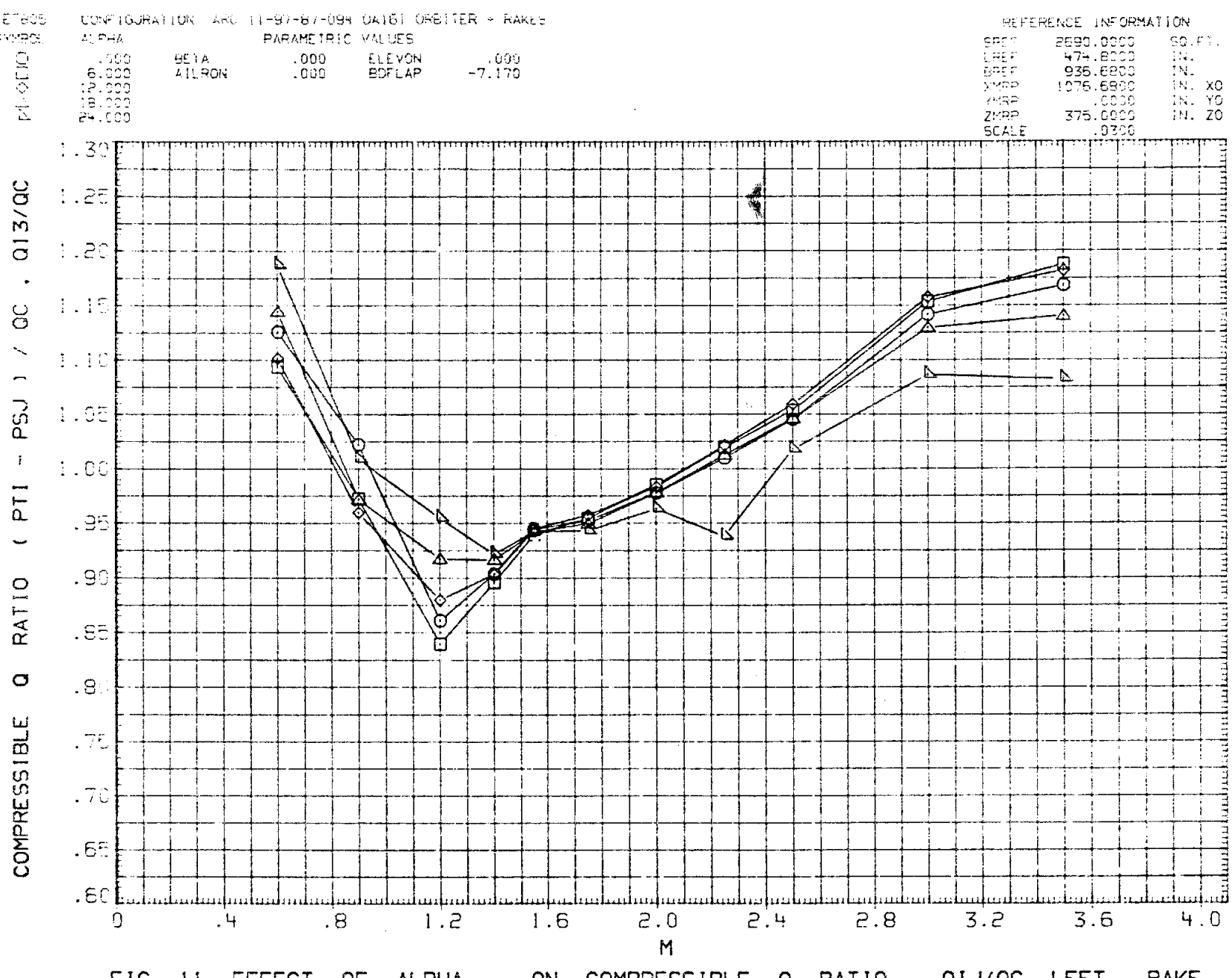


FIG. 11 EFFECT OF ALPHA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

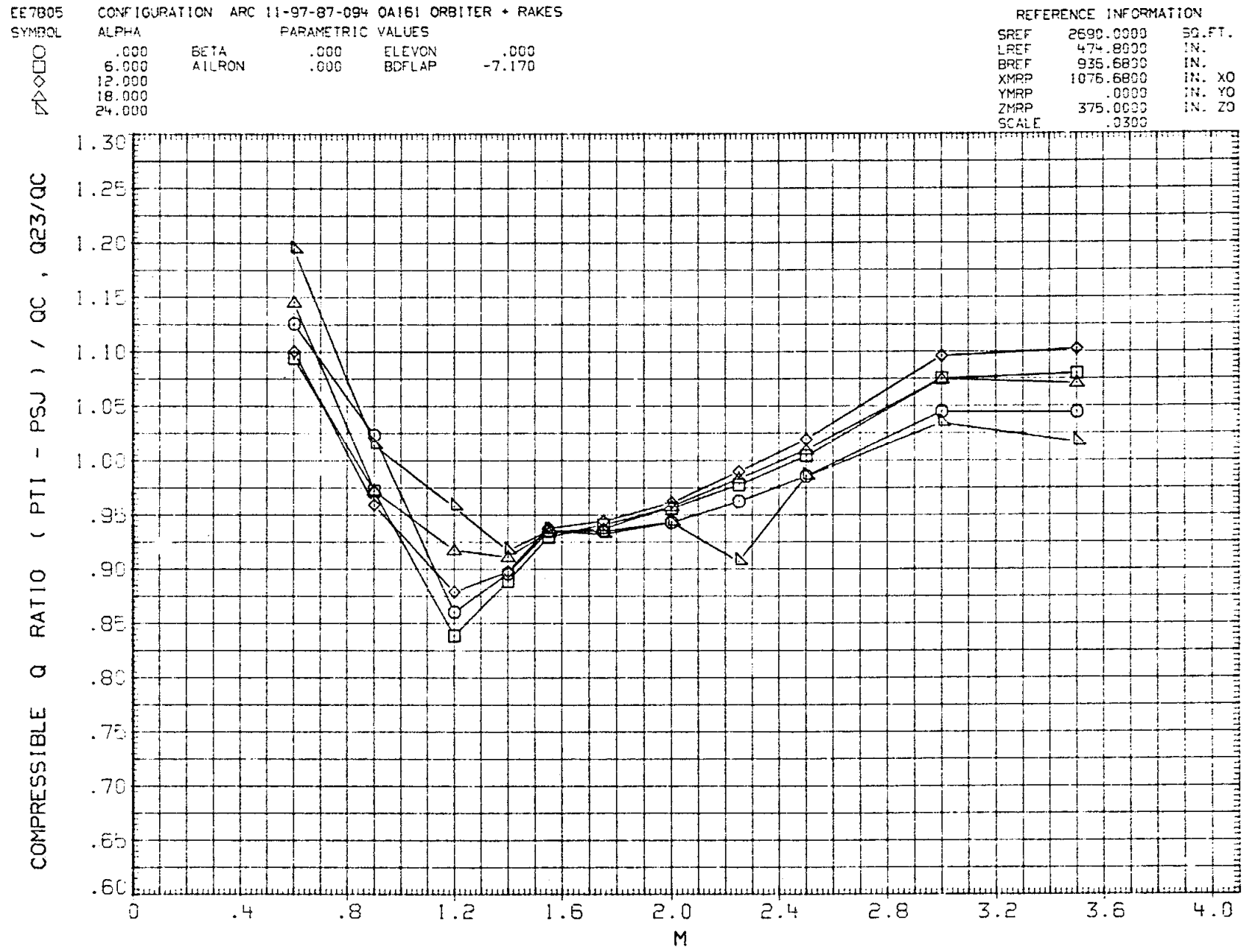


FIG. 11 EFFECT OF ALPHA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

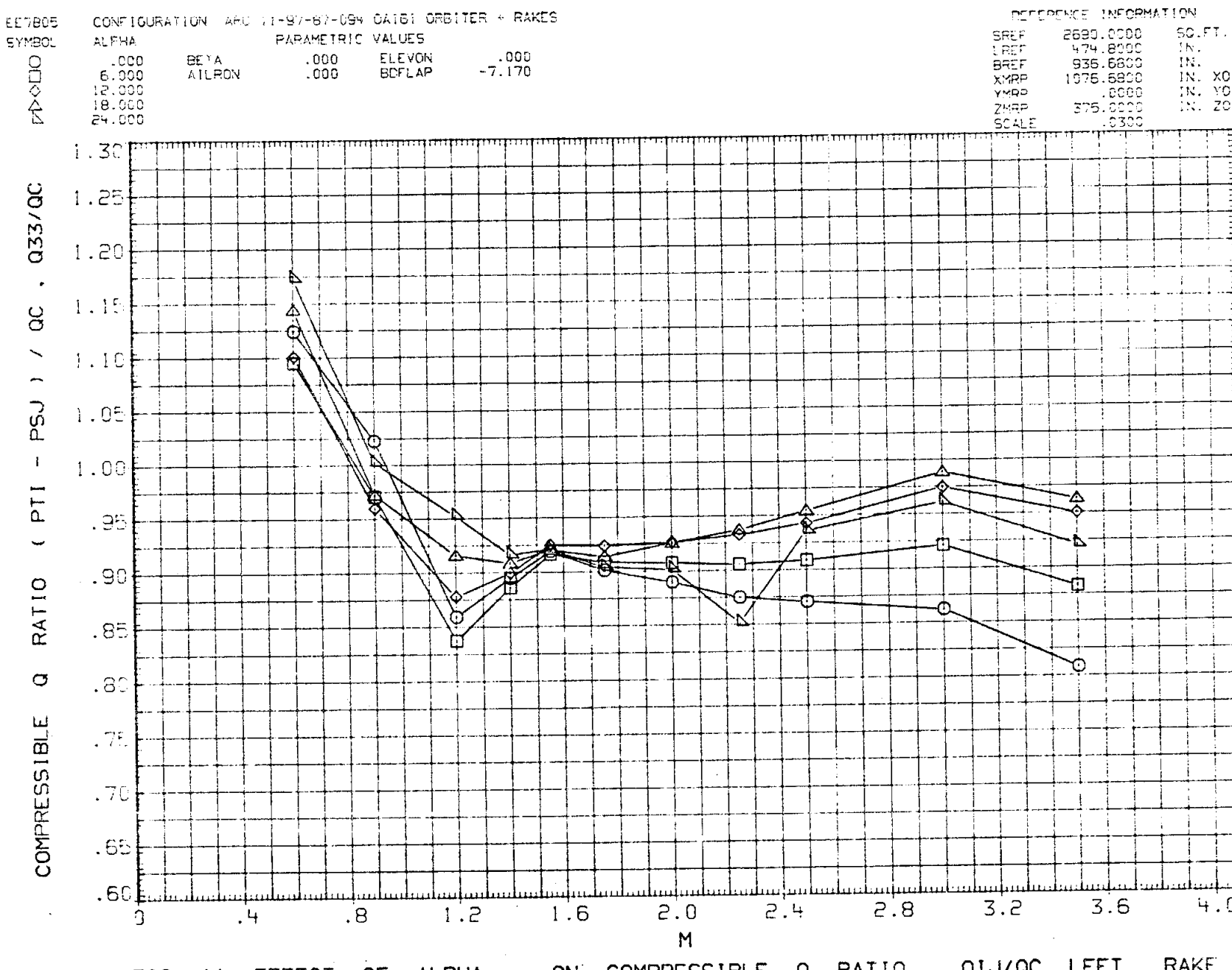


FIG. 11 EFFECT OF ALPHA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

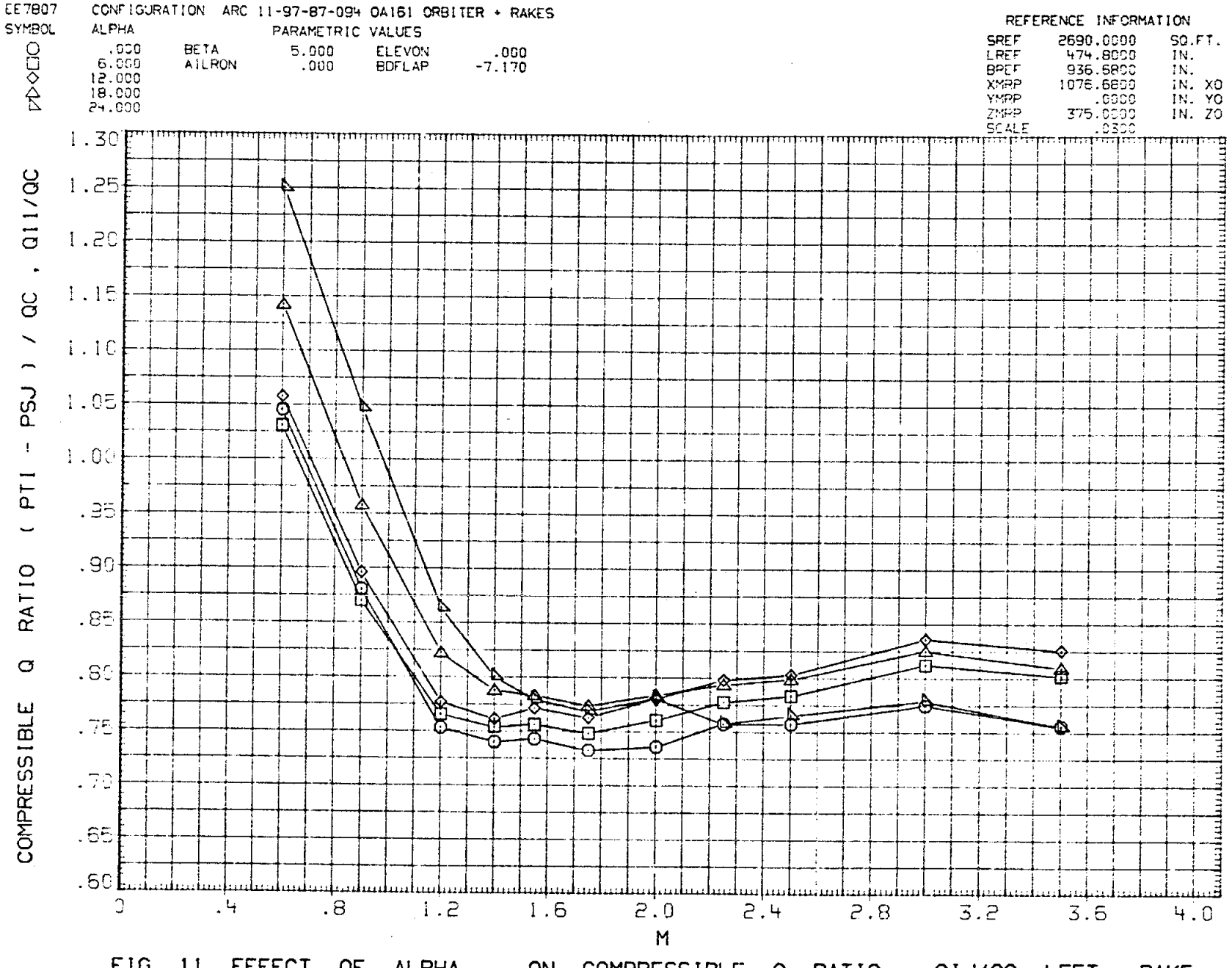


FIG. 11 EFFECT OF ALPHA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

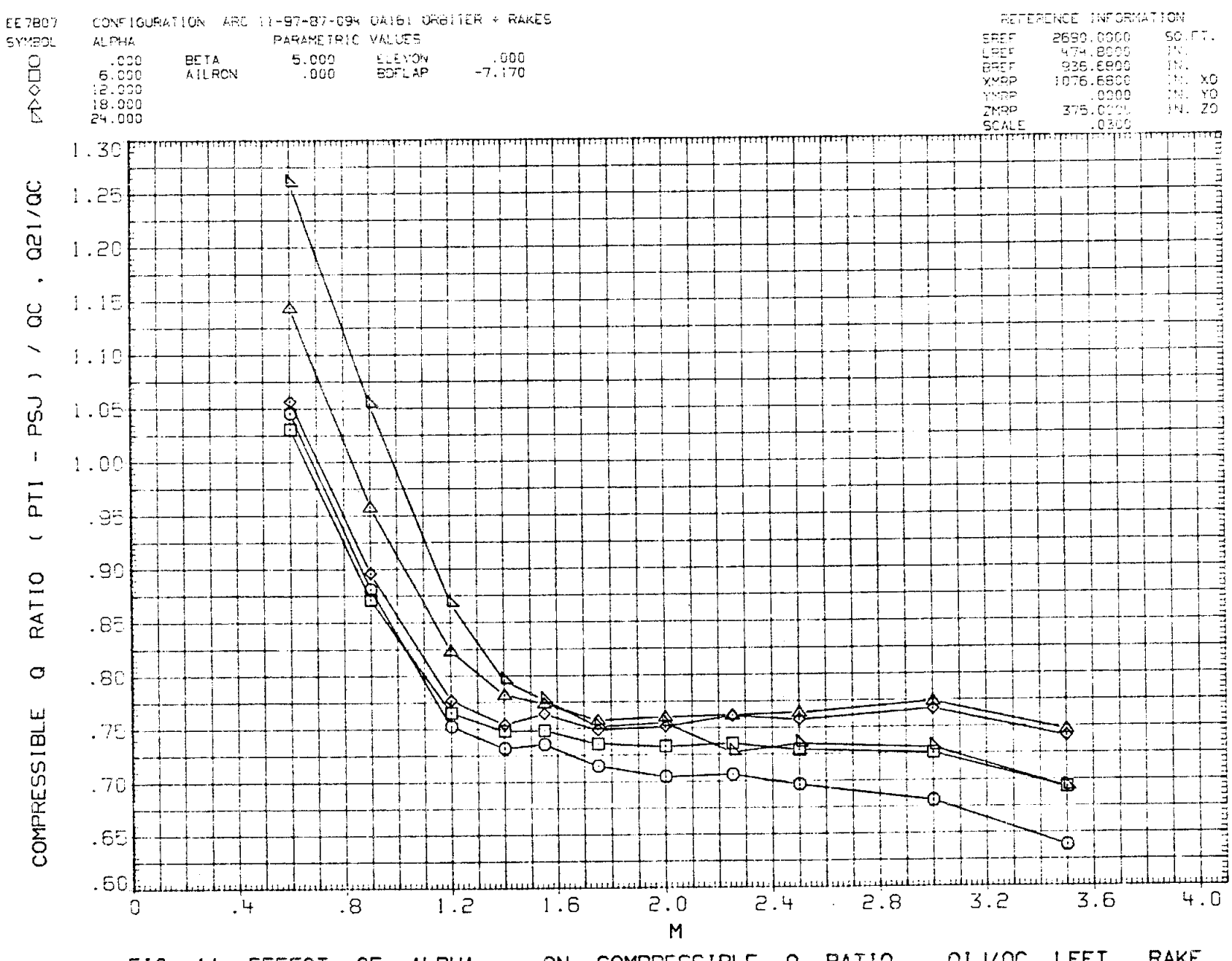


FIG. 11 EFFECT OF ALPHA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

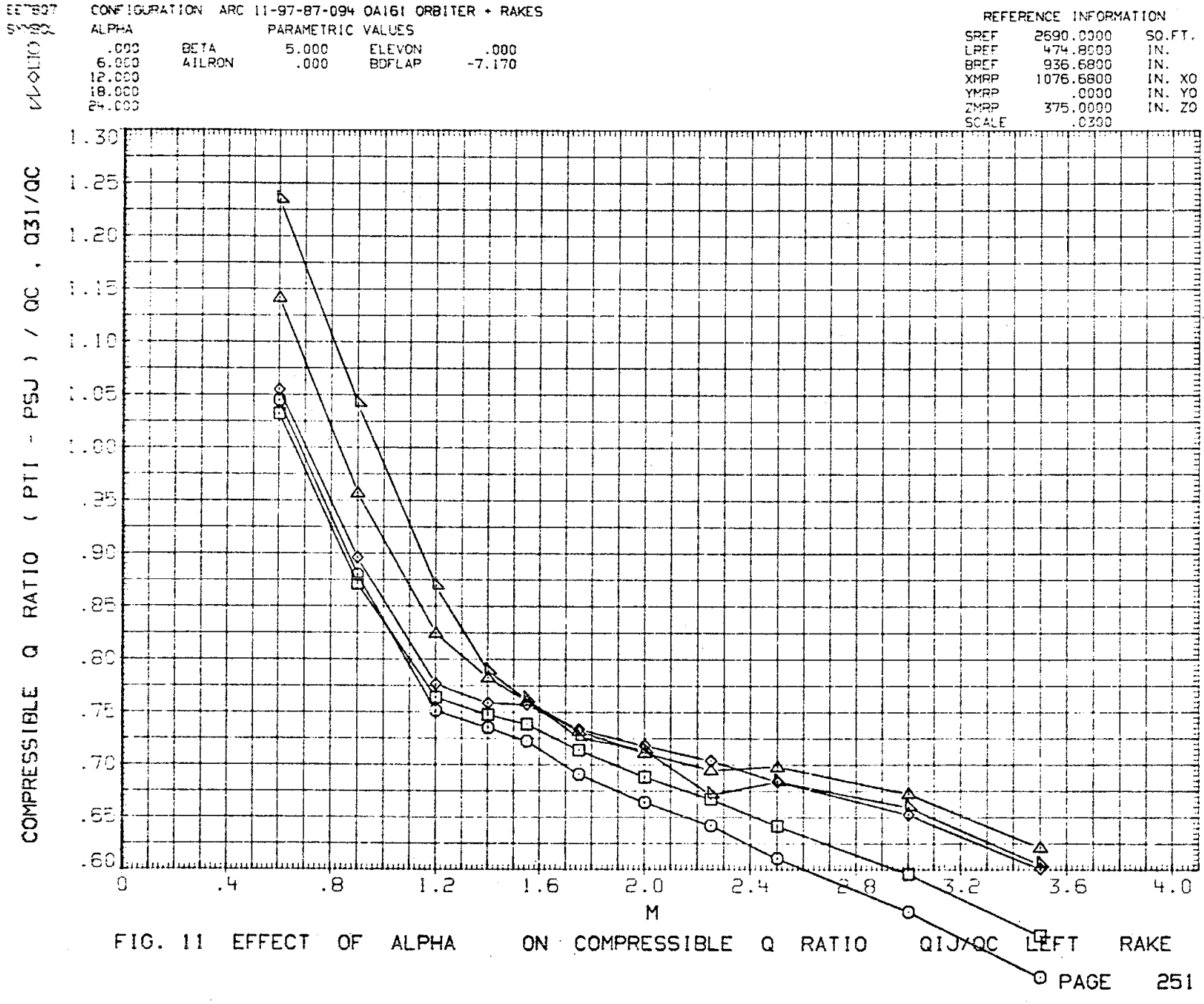


FIG. 11 EFFECT OF ALPHA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

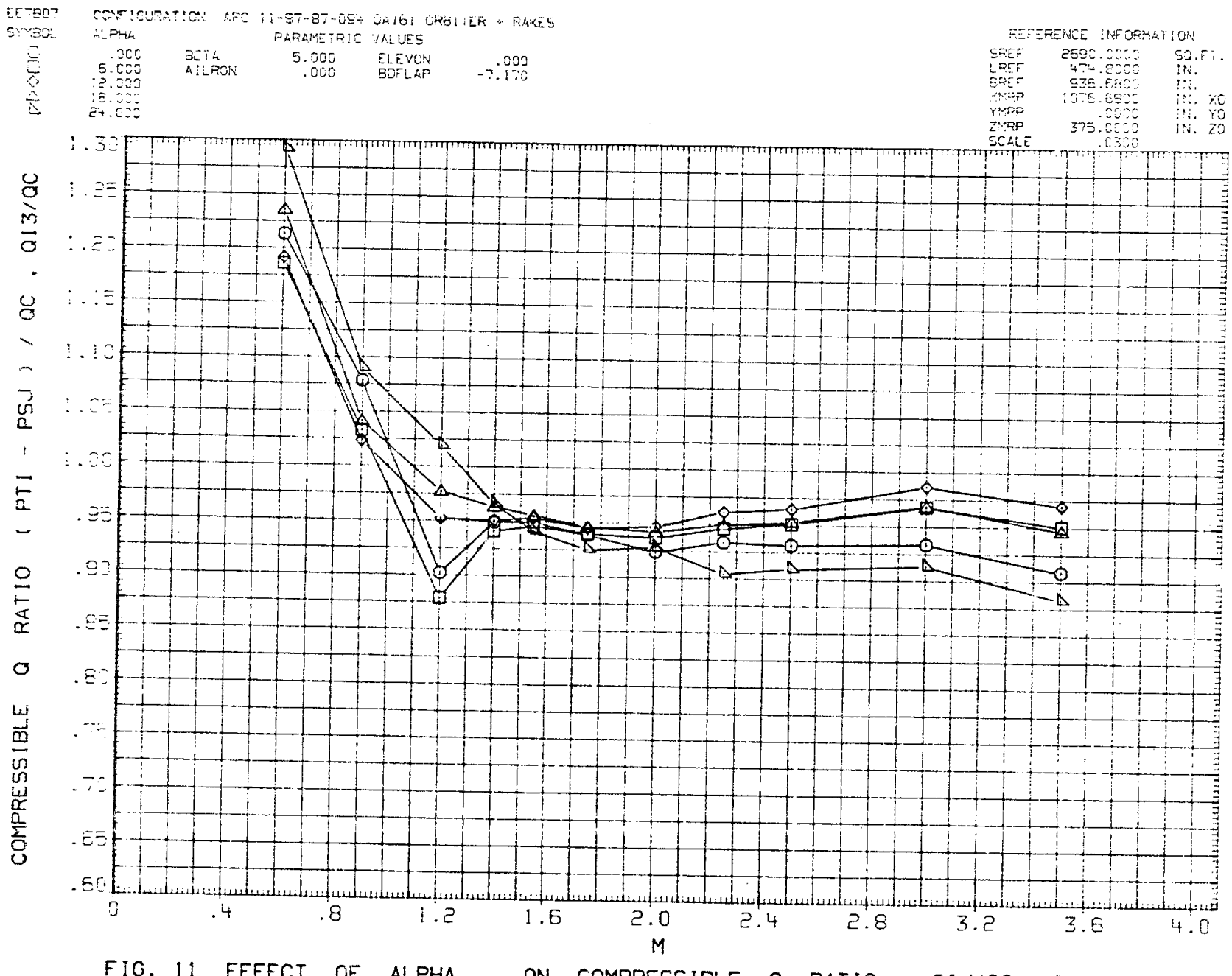


FIG. 11 EFFECT OF ALPHA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

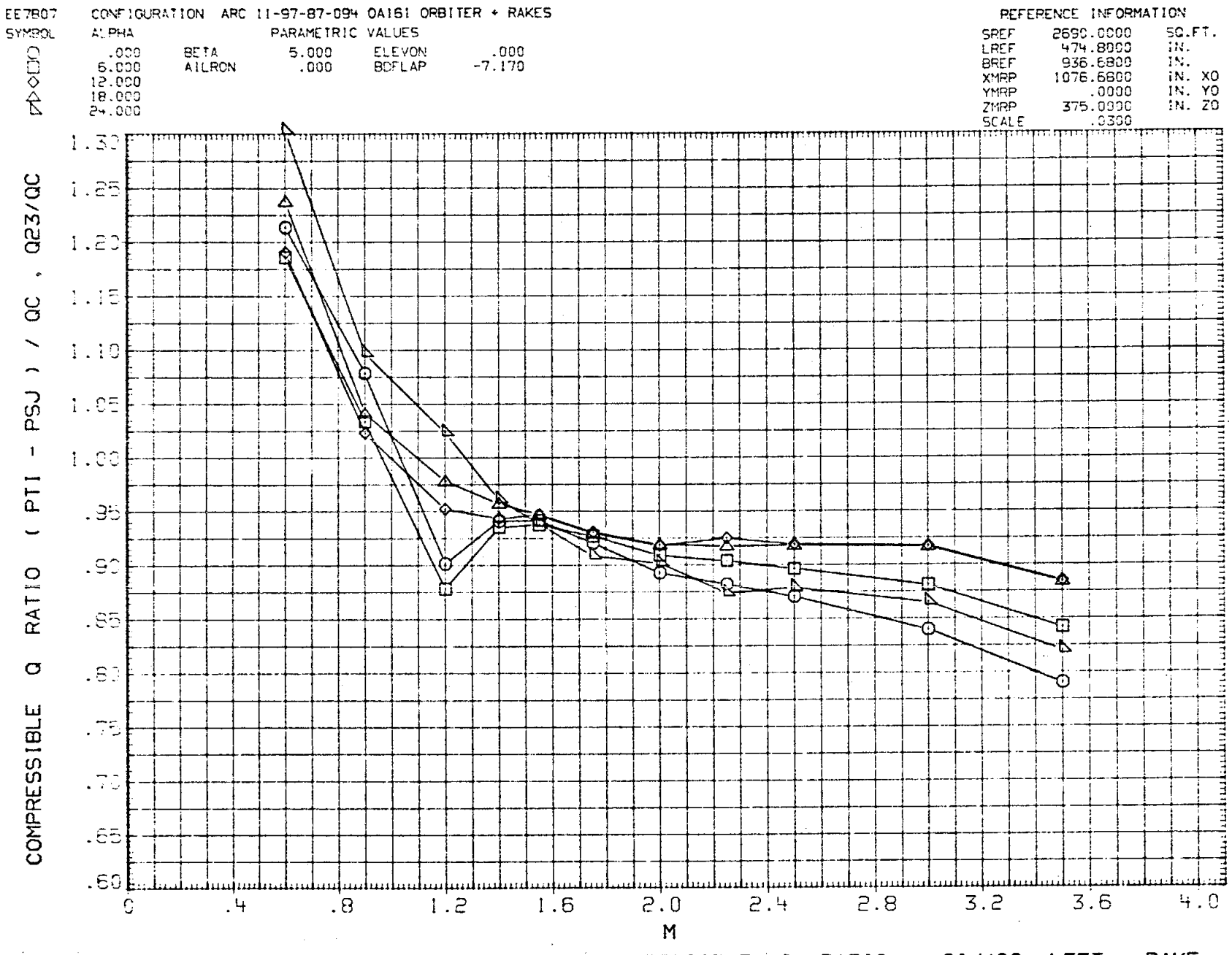


FIG. 11 EFFECT OF ALPHA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

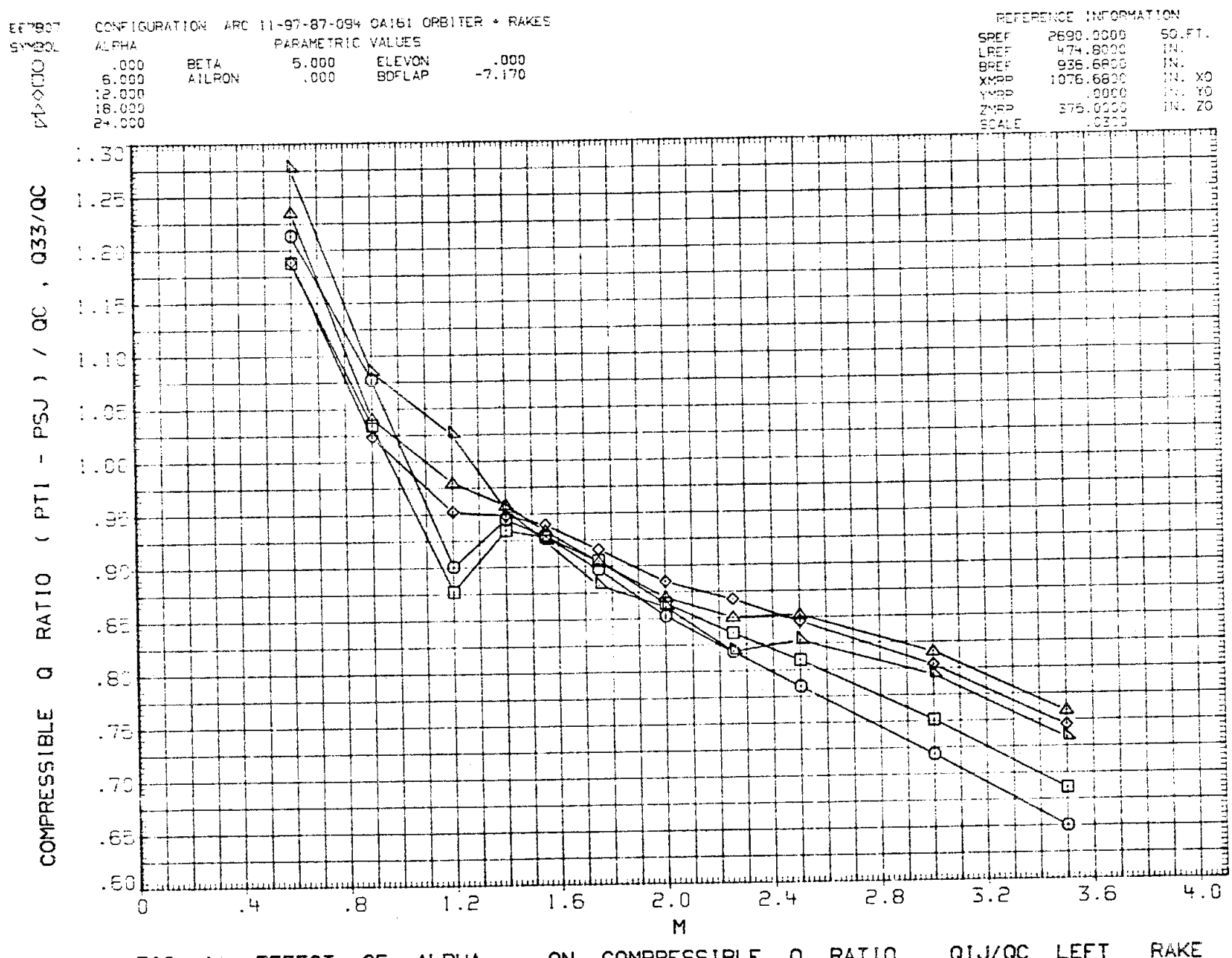


FIG. 11 EFFECT OF ALPHA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

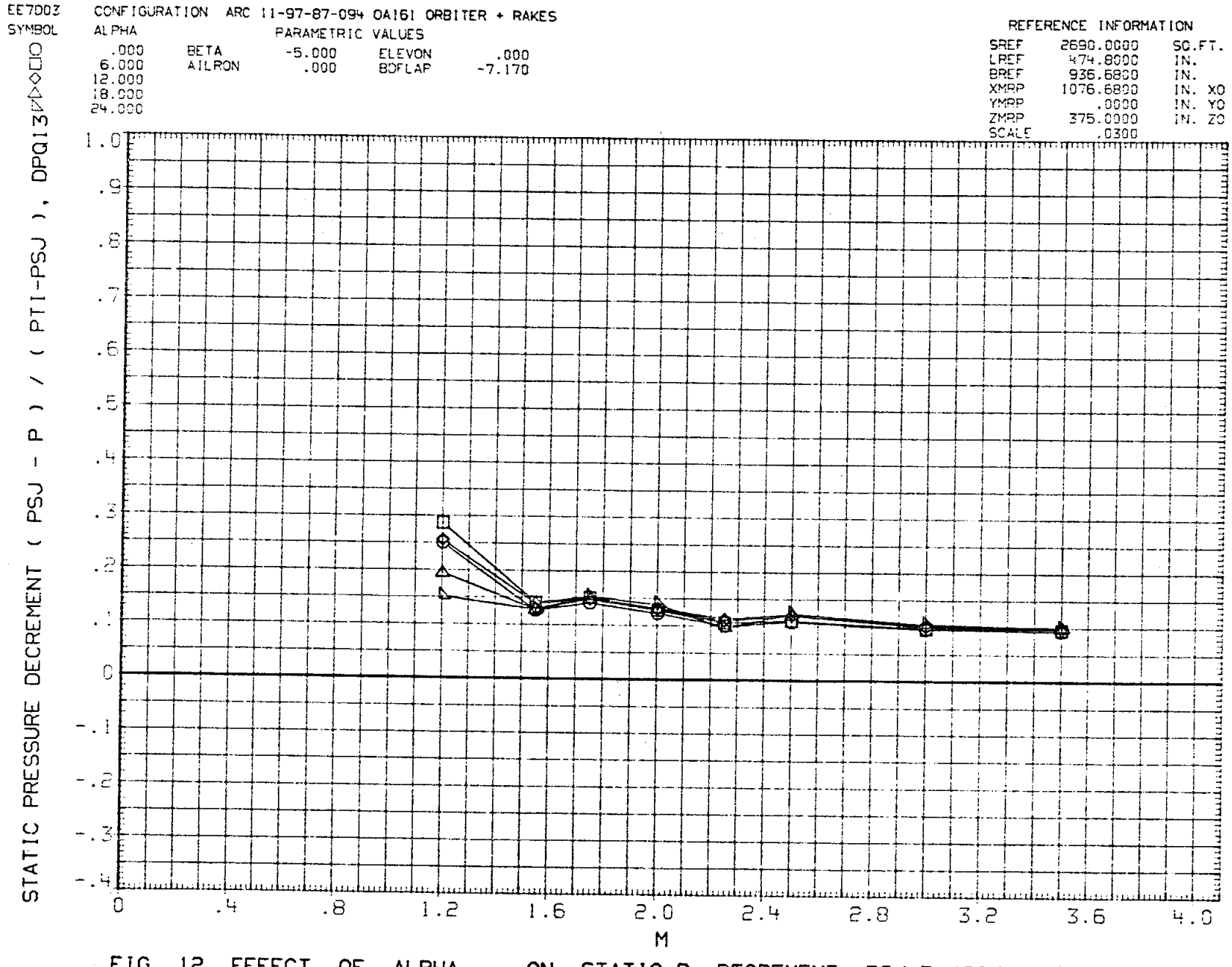


FIG. 12 EFFECT OF ALPHA ON STATIC P. DECREMENT PSJ-P /QIJ LEFT RAKE

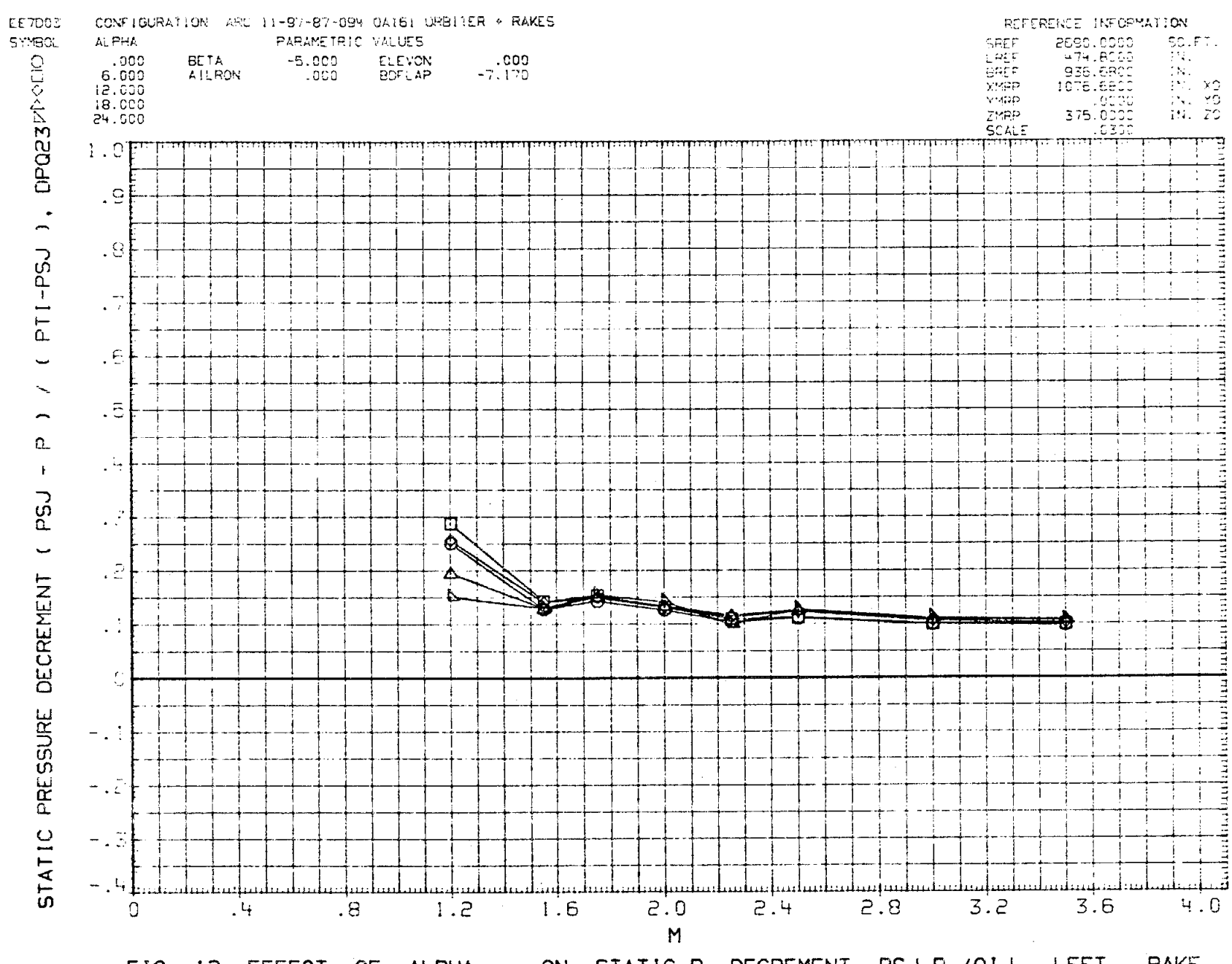


FIG. 12 EFFECT OF ALPHA ON STATIC P. DECREMENT PSJ-P /QIJ LEFT RAKE

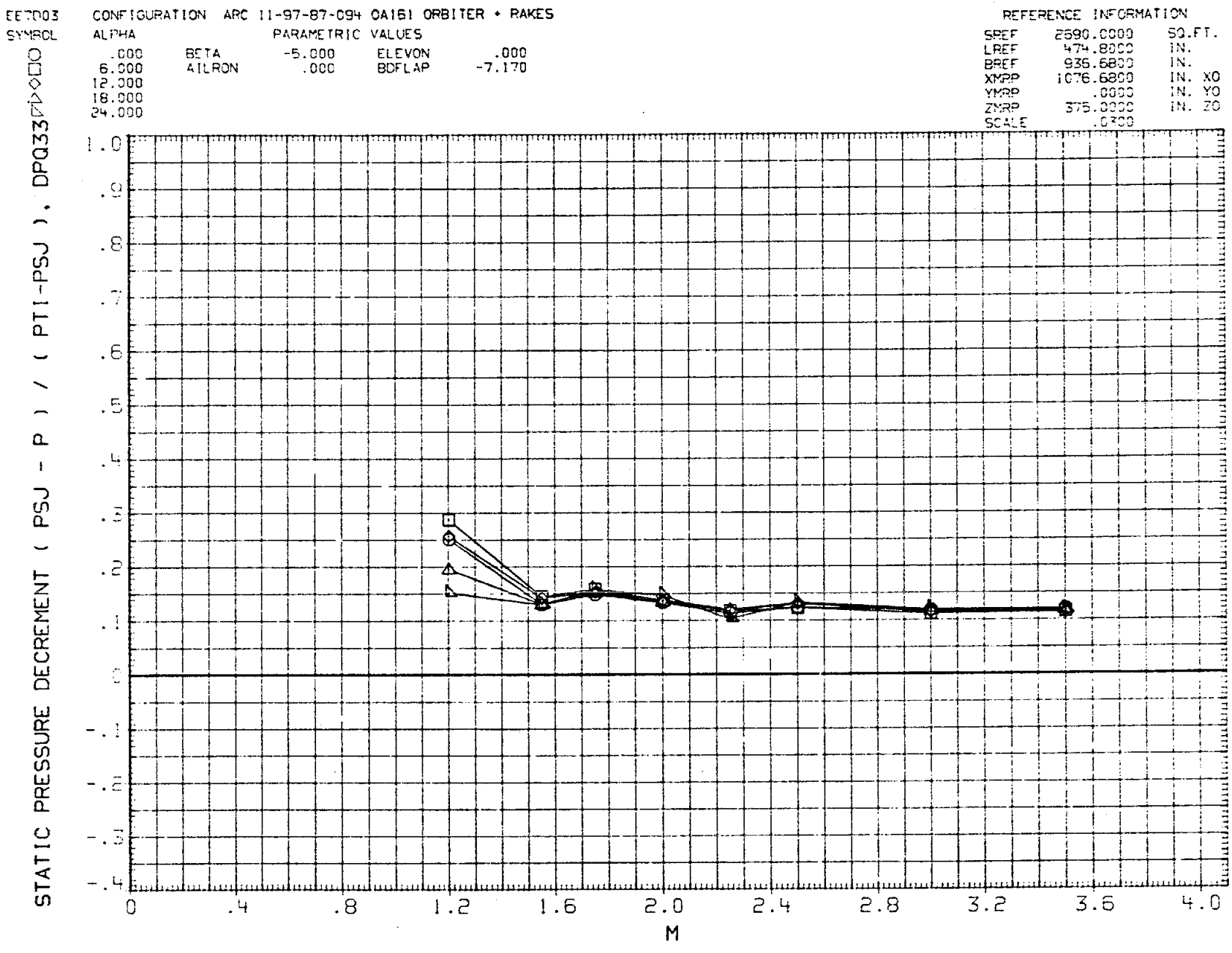


FIG. 12 EFFECT OF ALPHA ON STATIC P. DECREMENT PSJ-P /QIJ LEFT RAKE

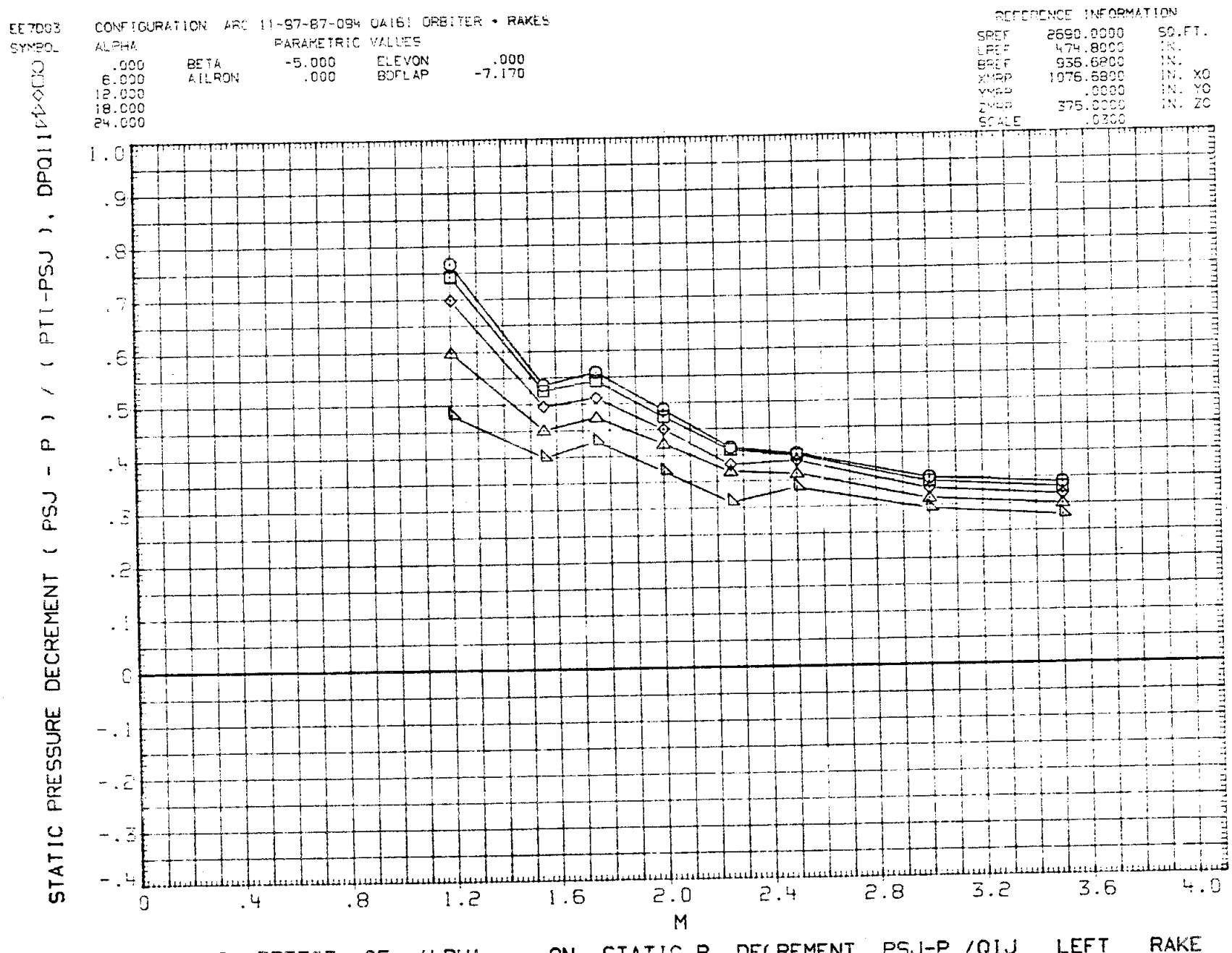


FIG. 12 EFFECT OF ALPHA ON STATIC P. DECREMENT PSJ-P /QIJ LEFT RAKE

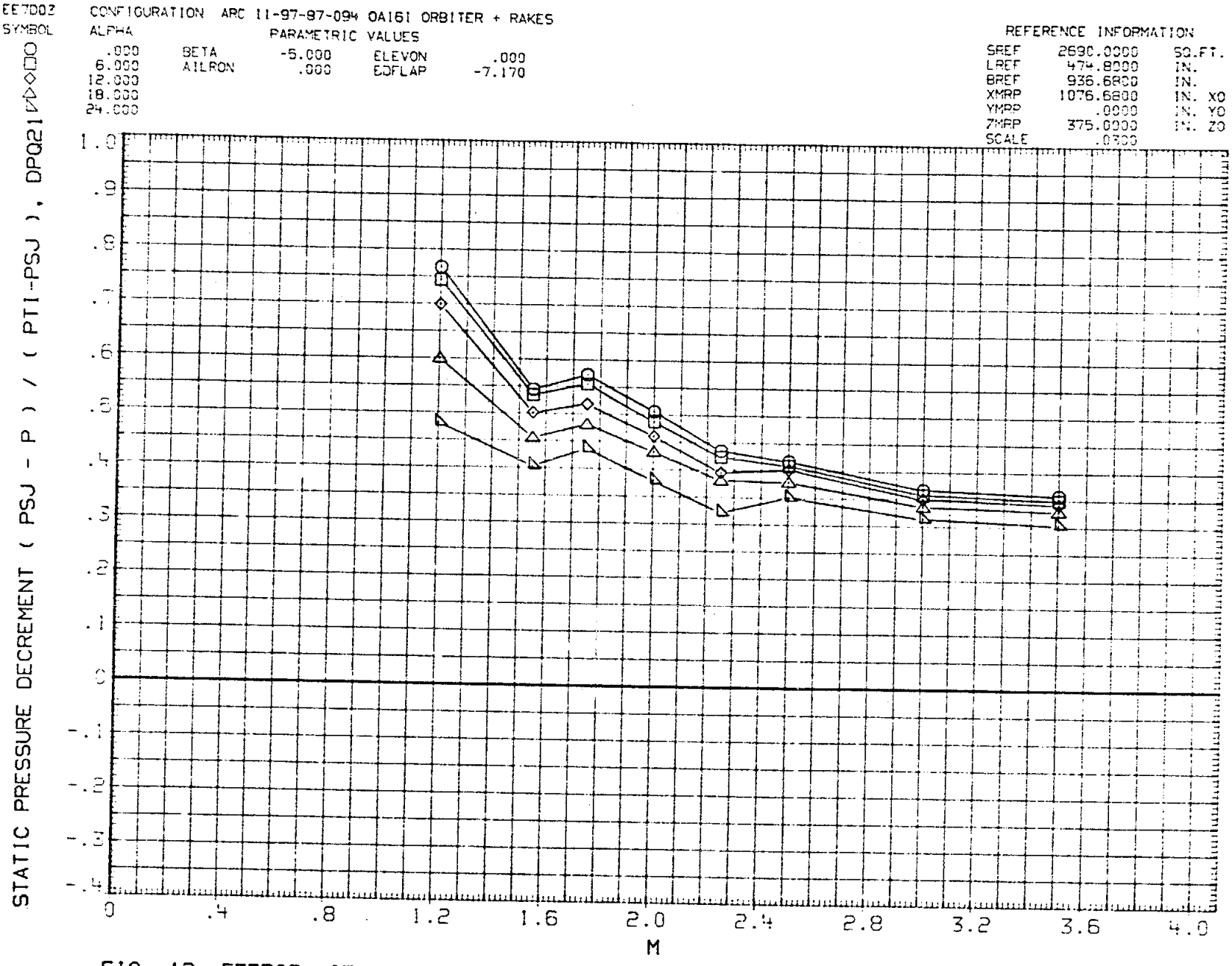


FIG. 12 EFFECT OF ALPHA ON STATIC P. DECREMENT PSJ-P /QIJ LEFT RAKE

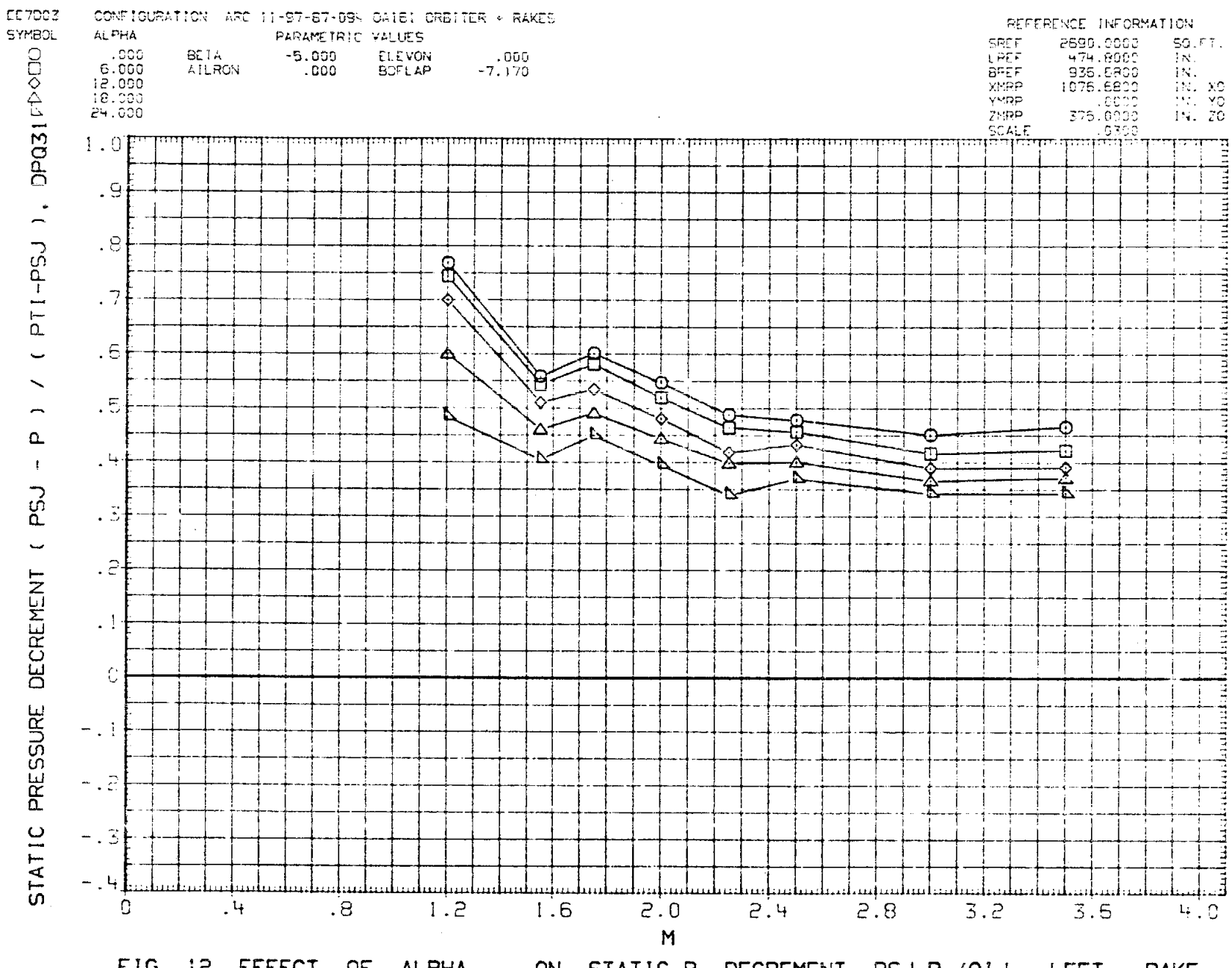


FIG. 12 EFFECT OF ALPHA ON STATIC P. DECREMENT PSJ-P /QIJ LEFT RAKE

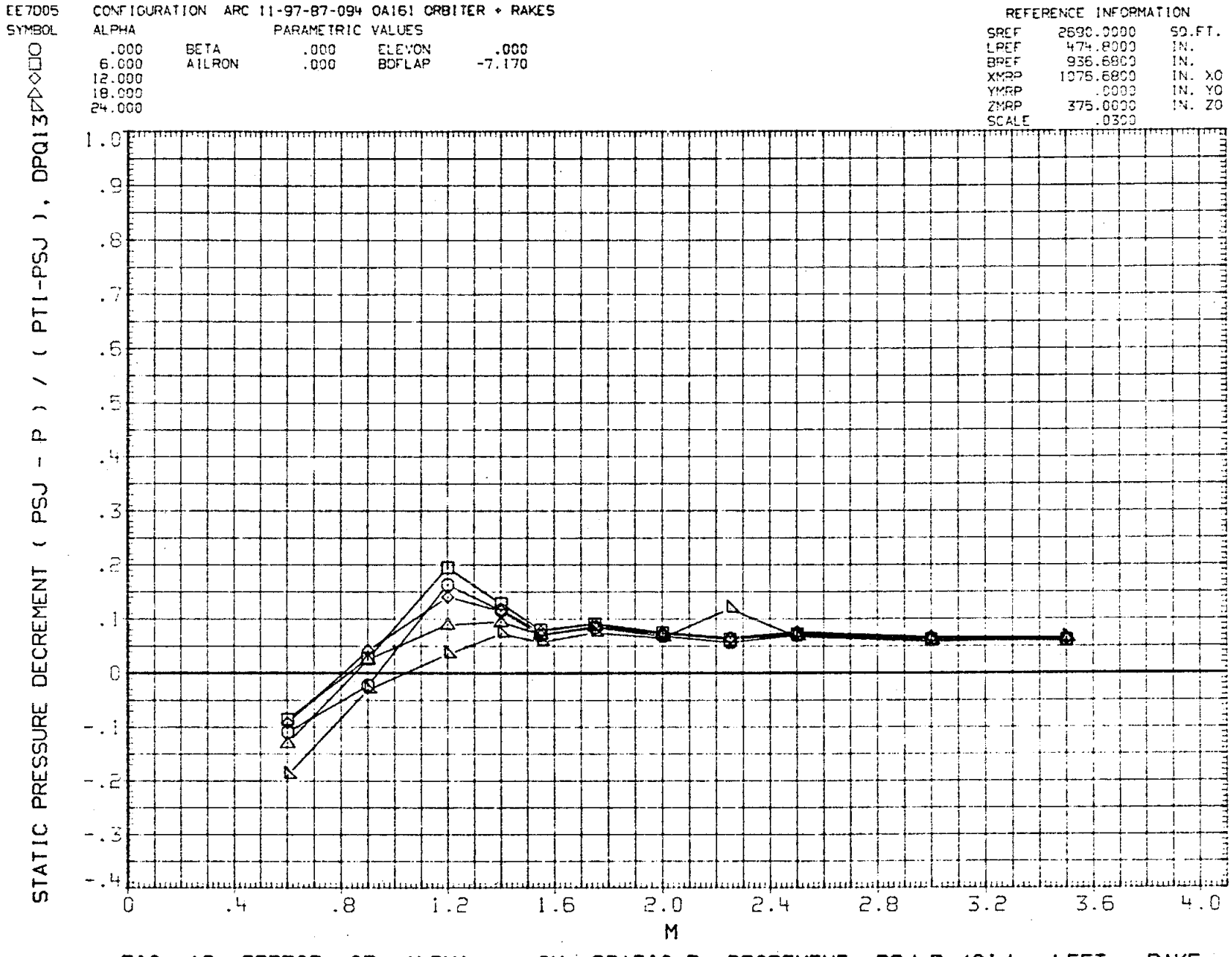


FIG. 12 EFFECT OF ALPHA ON STATIC P. DECREMENT PSJ-P /QIJ LEFT RAKE

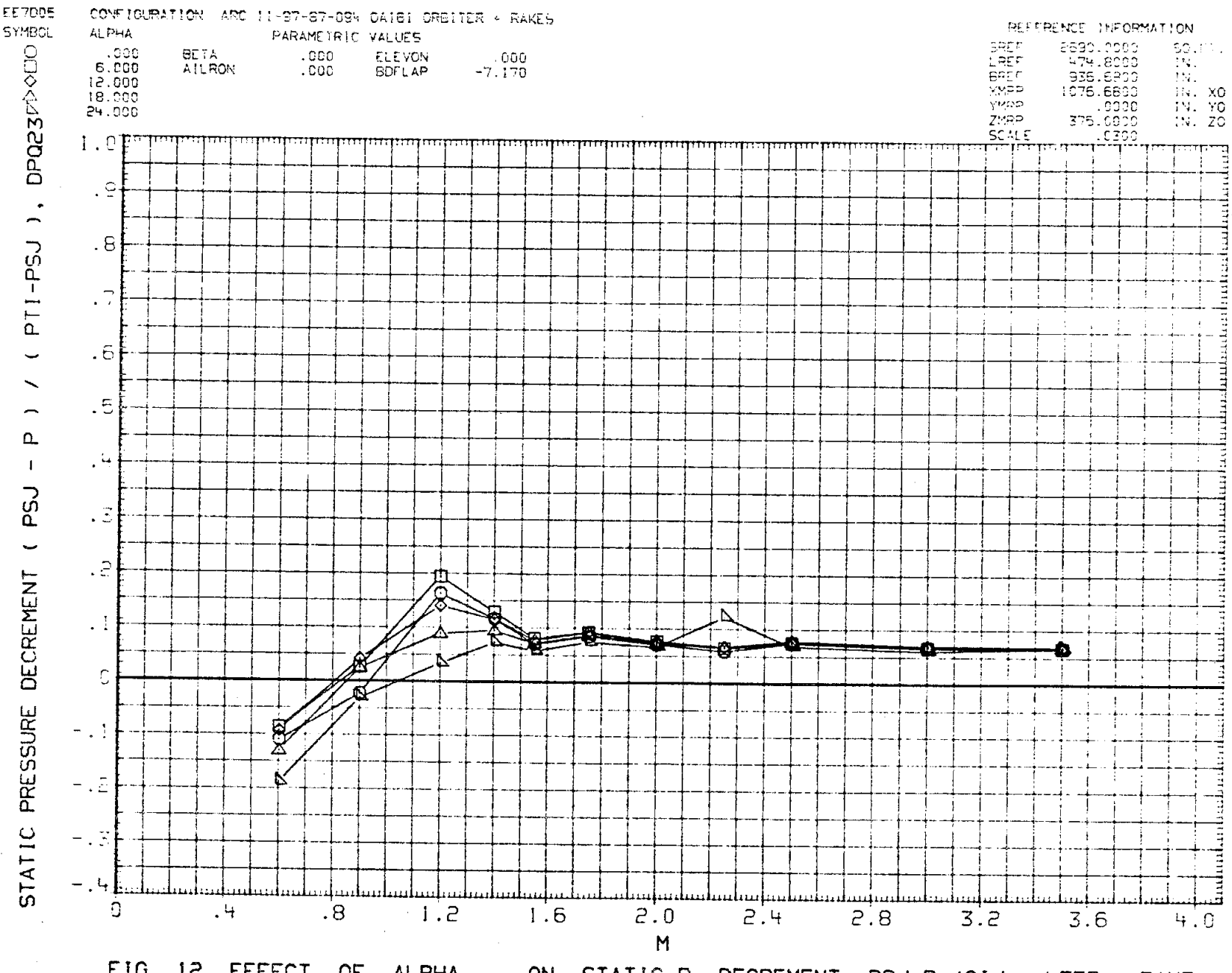


FIG. 12 EFFECT OF ALPHA ON STATIC P. DECREMENT PSJ-P /QIJ LEFT RAKE

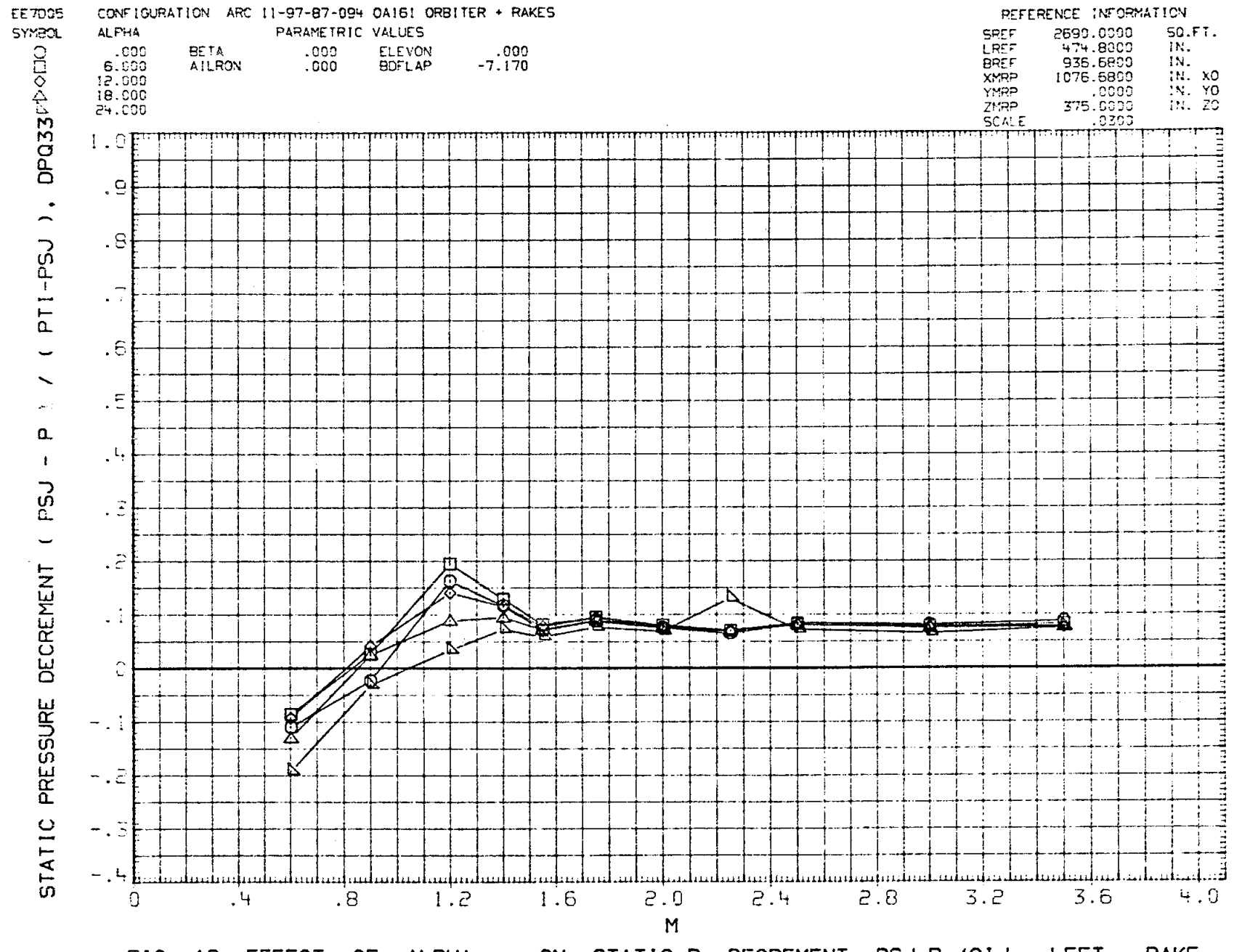


FIG. 12 EFFECT OF ALPHA ON STATIC P. DECREMENT PSJ-P /QIJ LEFT RAKE

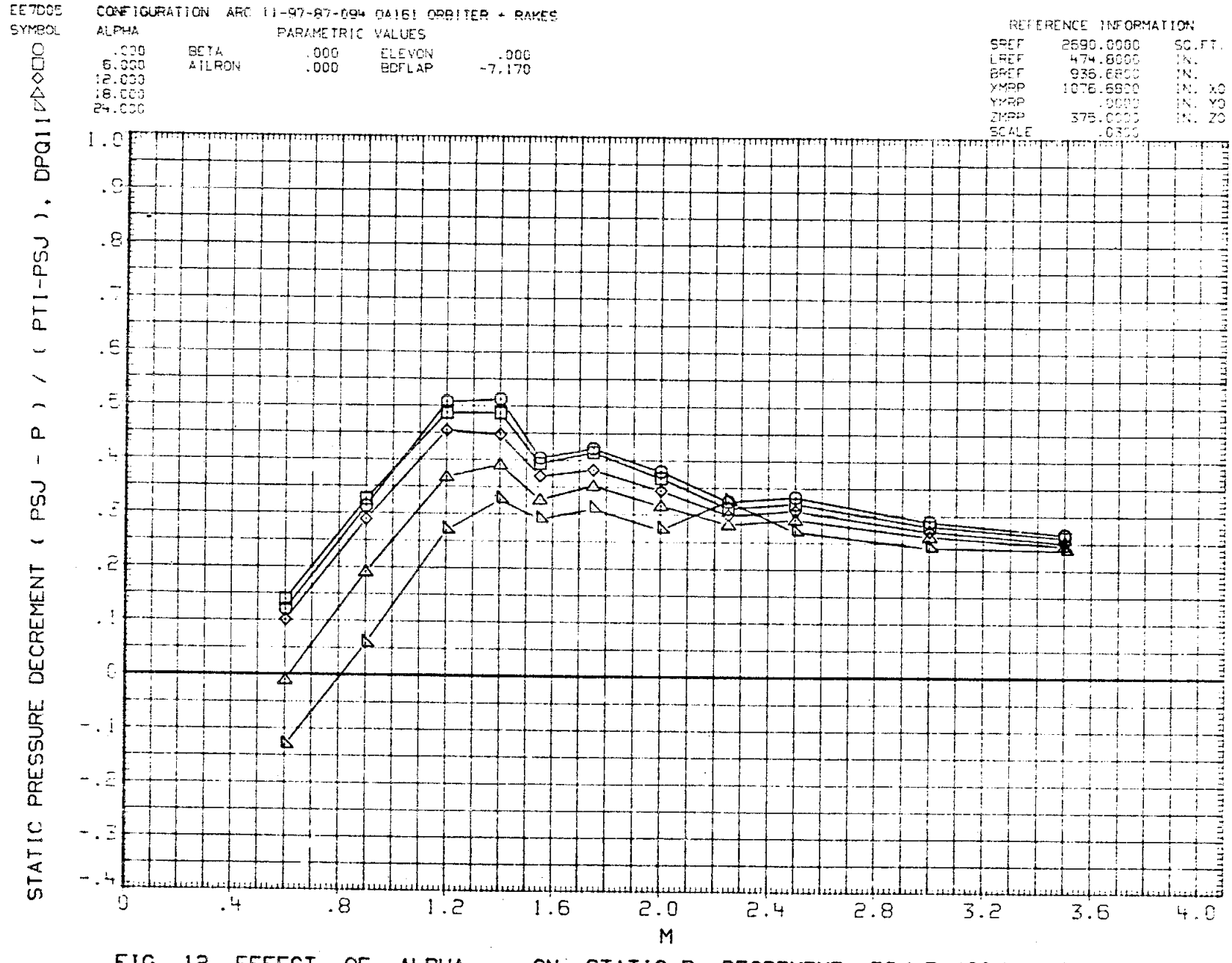


FIG. 12 EFFECT OF ALPHA ON STATIC P. DECREMENT PSJ-P /QIJ LEFT RAKE



FIG. 12 EFFECT OF ALPHA ON STATIC P. DECREMENT PSJ-P /QIJ LEFT RAKE

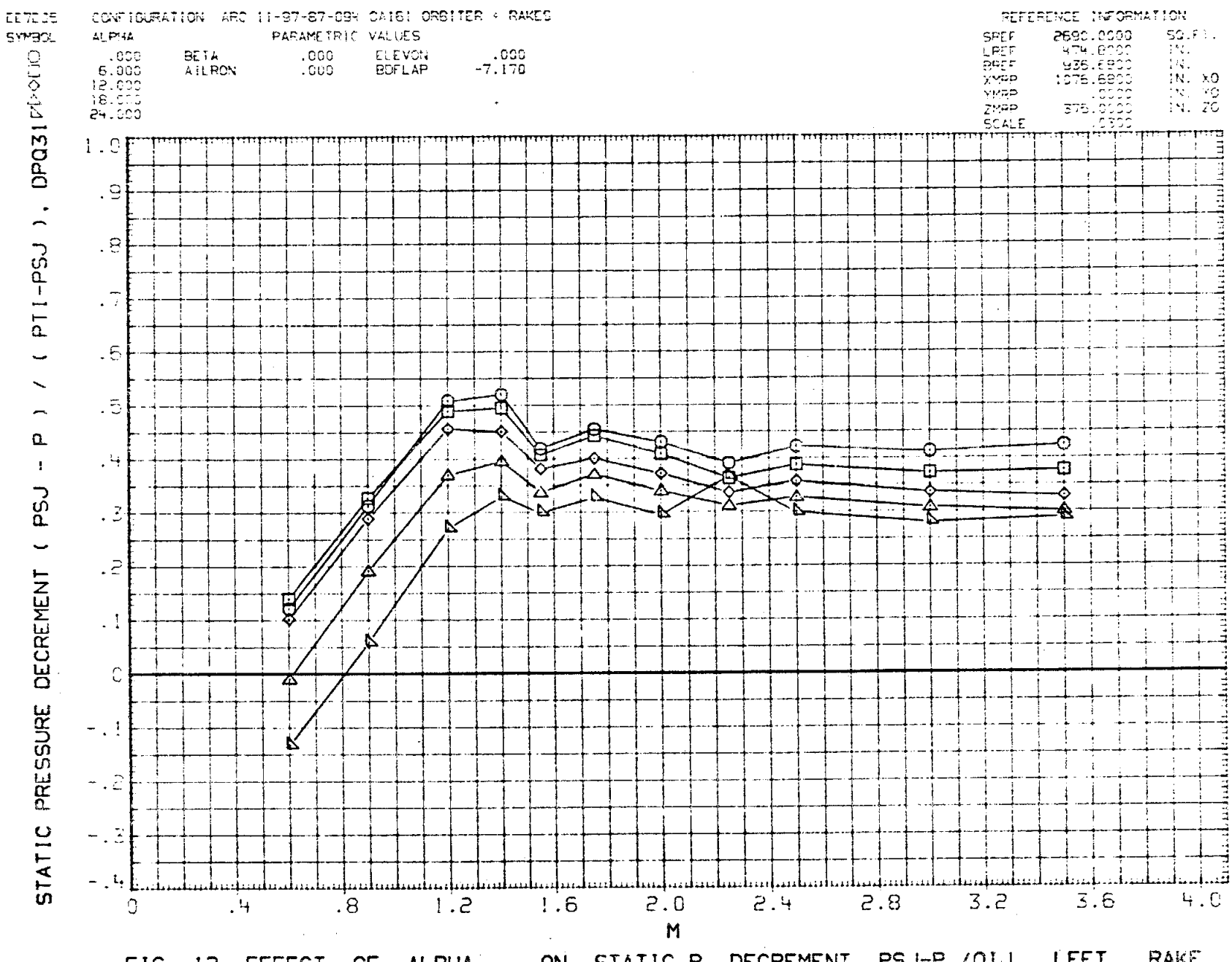


FIG. 12 EFFECT OF ALPHA ON STATIC P. DECREMENT PSJ-P /QIJ LEFT RAKE

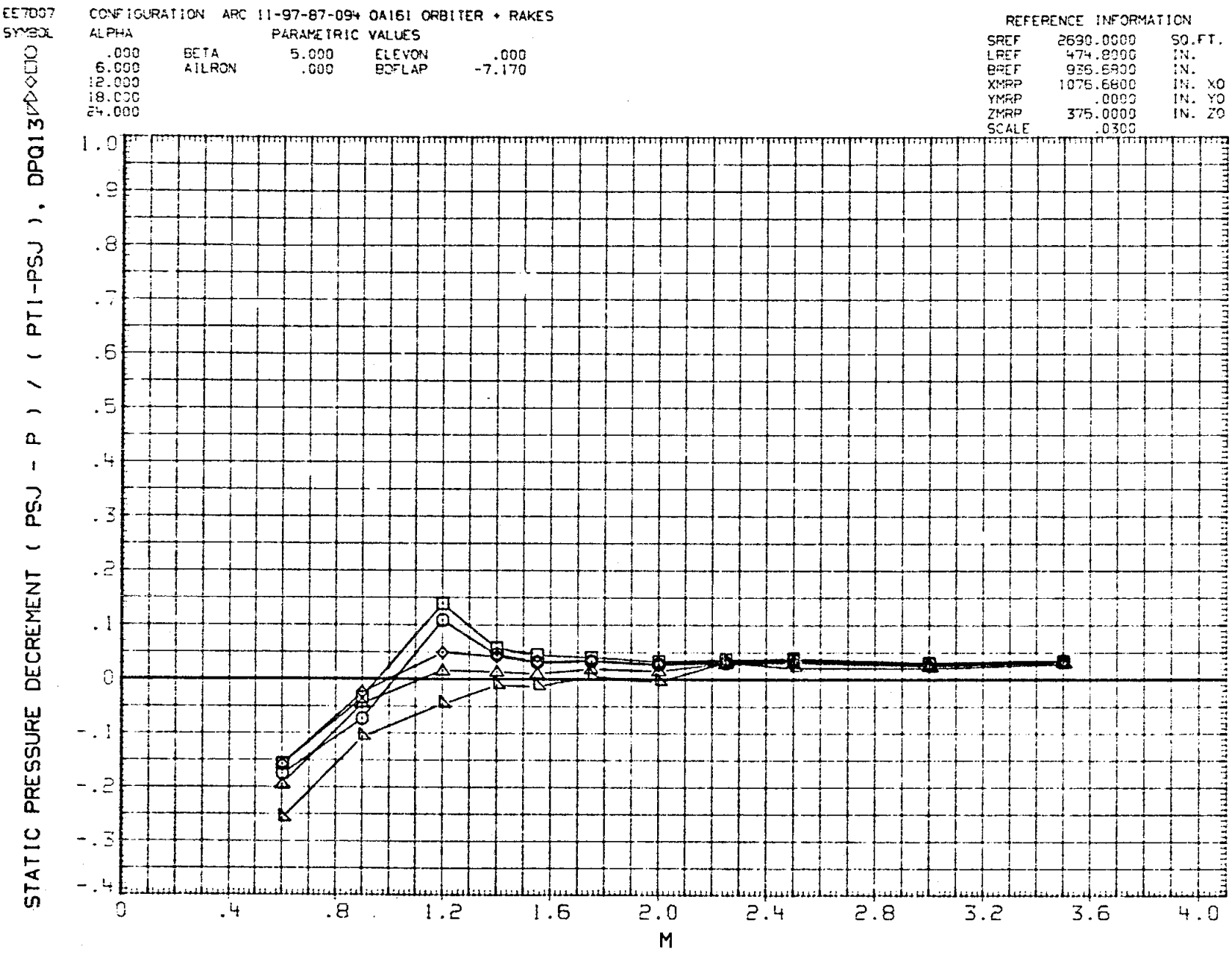


FIG. 12 EFFECT OF ALPHA ON STATIC P. DECREMENT PSJ-P /QIJ LEFT RAKE

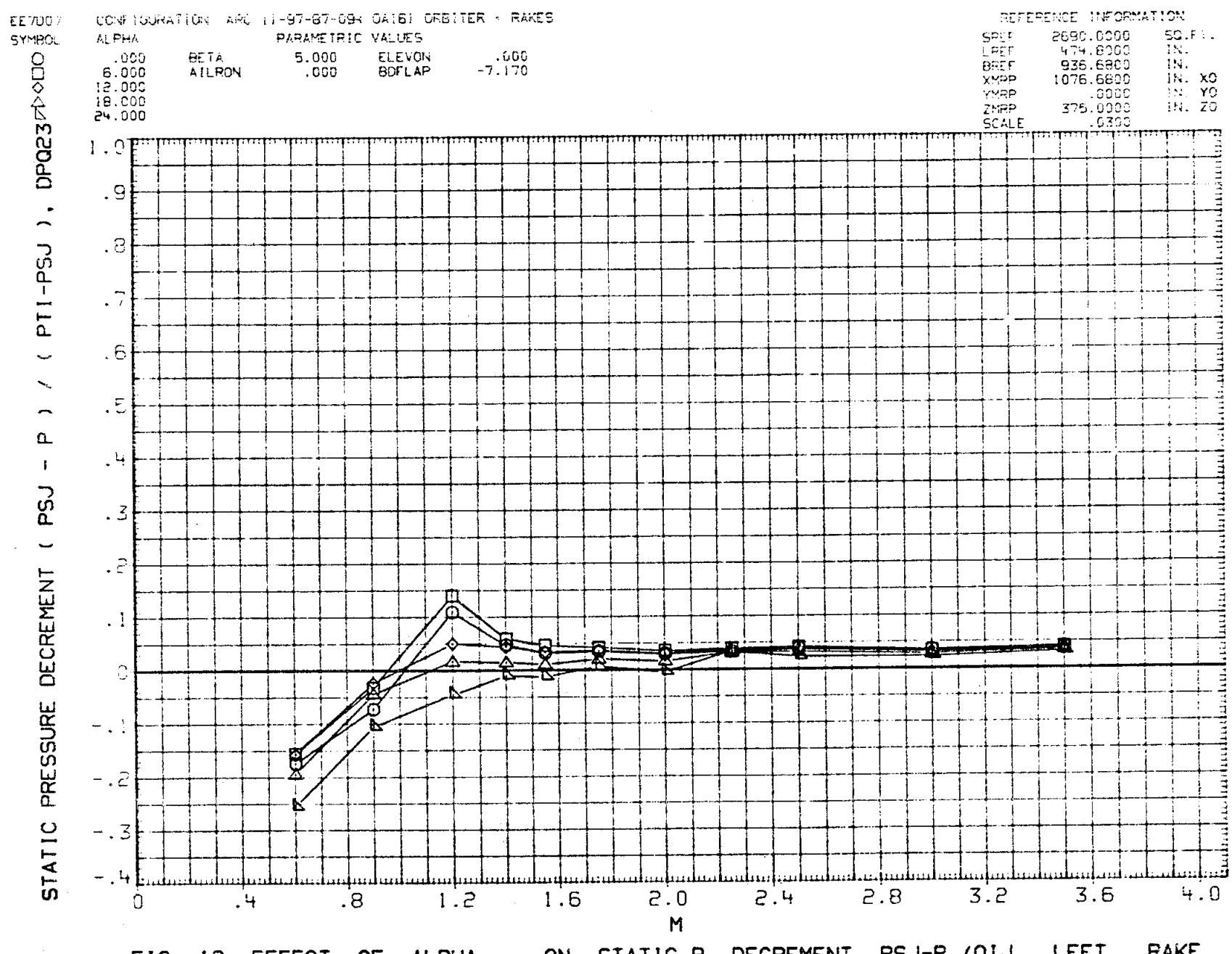


FIG. 12 EFFECT OF ALPHA ON STATIC P. DECREMENT PSJ-P /QIJ LEFT RAKE

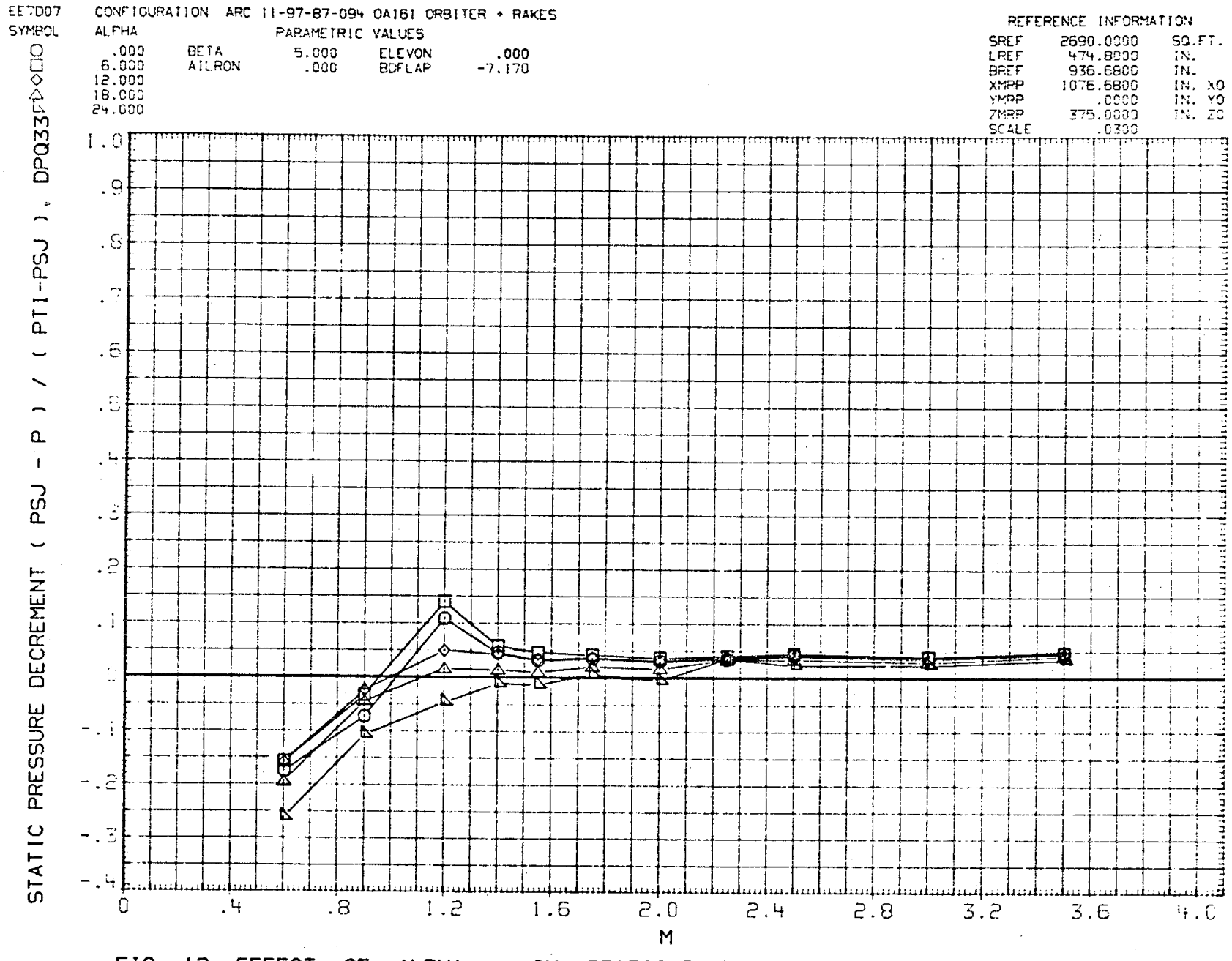


FIG. 12 EFFECT OF ALPHA ON STATIC P. DECREMENT PSJ-P /QIJ LEFT RAKE

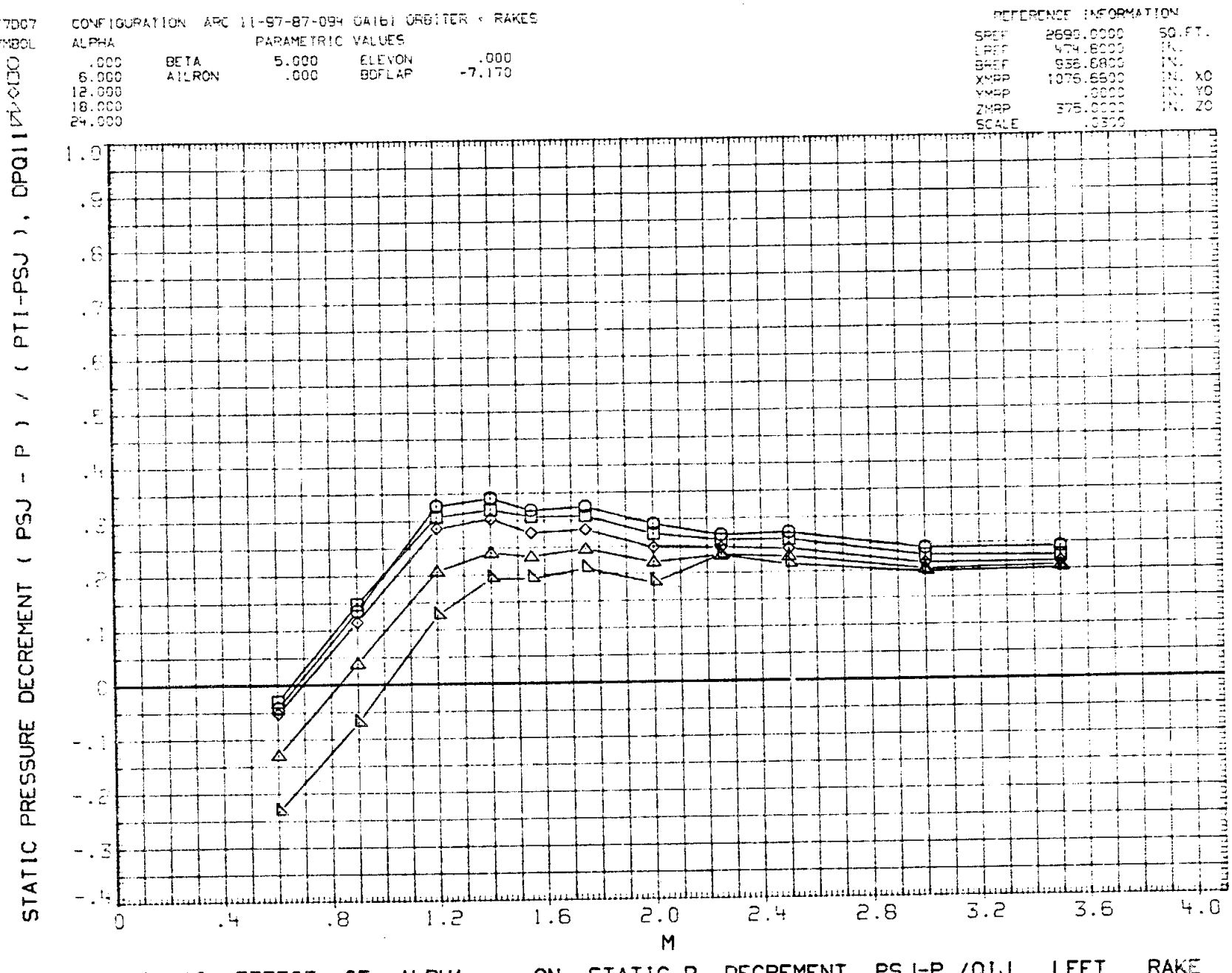


FIG. 12 EFFECT OF ALPHA ON STATIC P. DECREMENT PSJ-P /QIJ LEFT RAKE

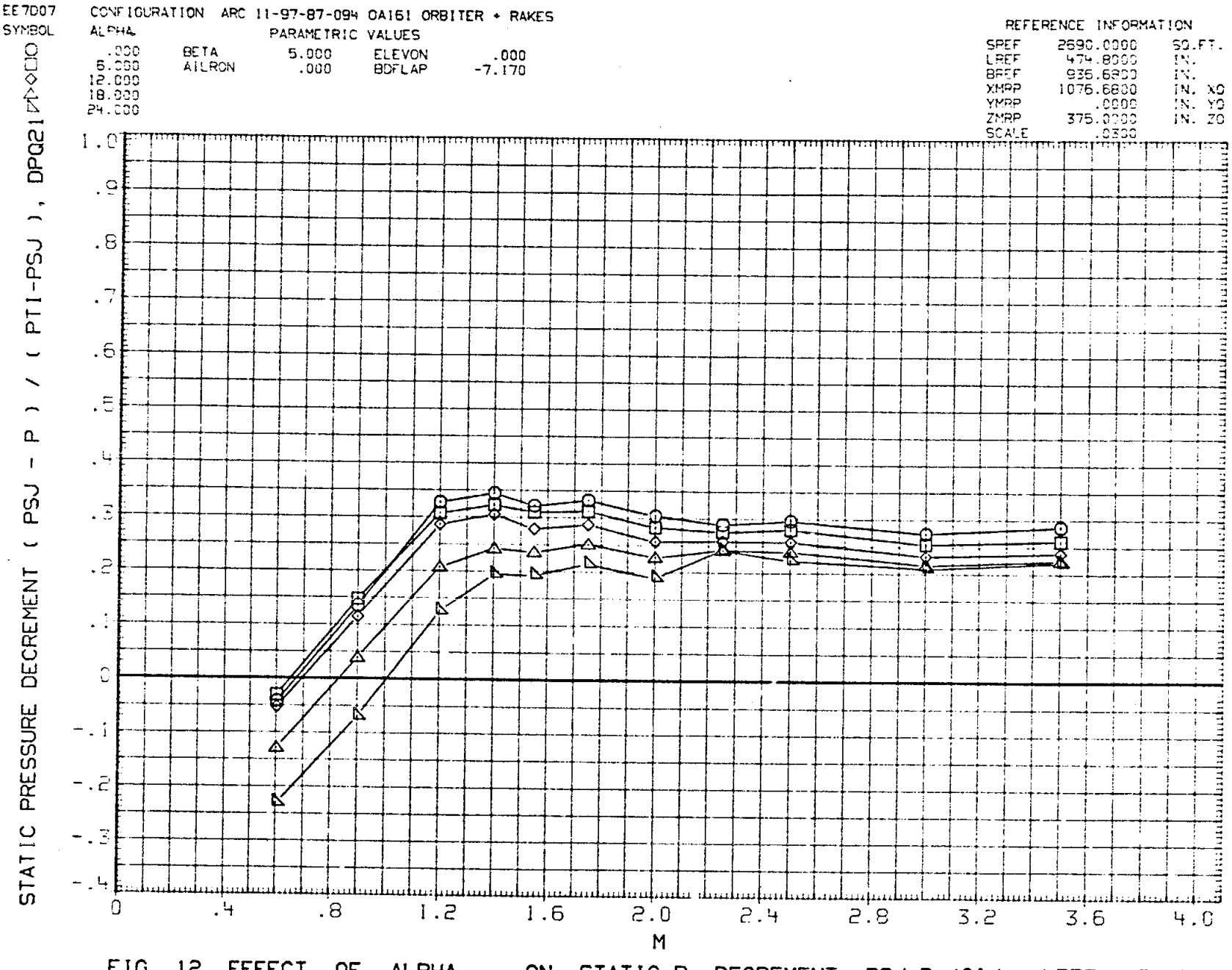


FIG. 12 EFFECT OF ALPHA ON STATIC P. DECREMENT PSJ-P /Q1J LEFT RAKE

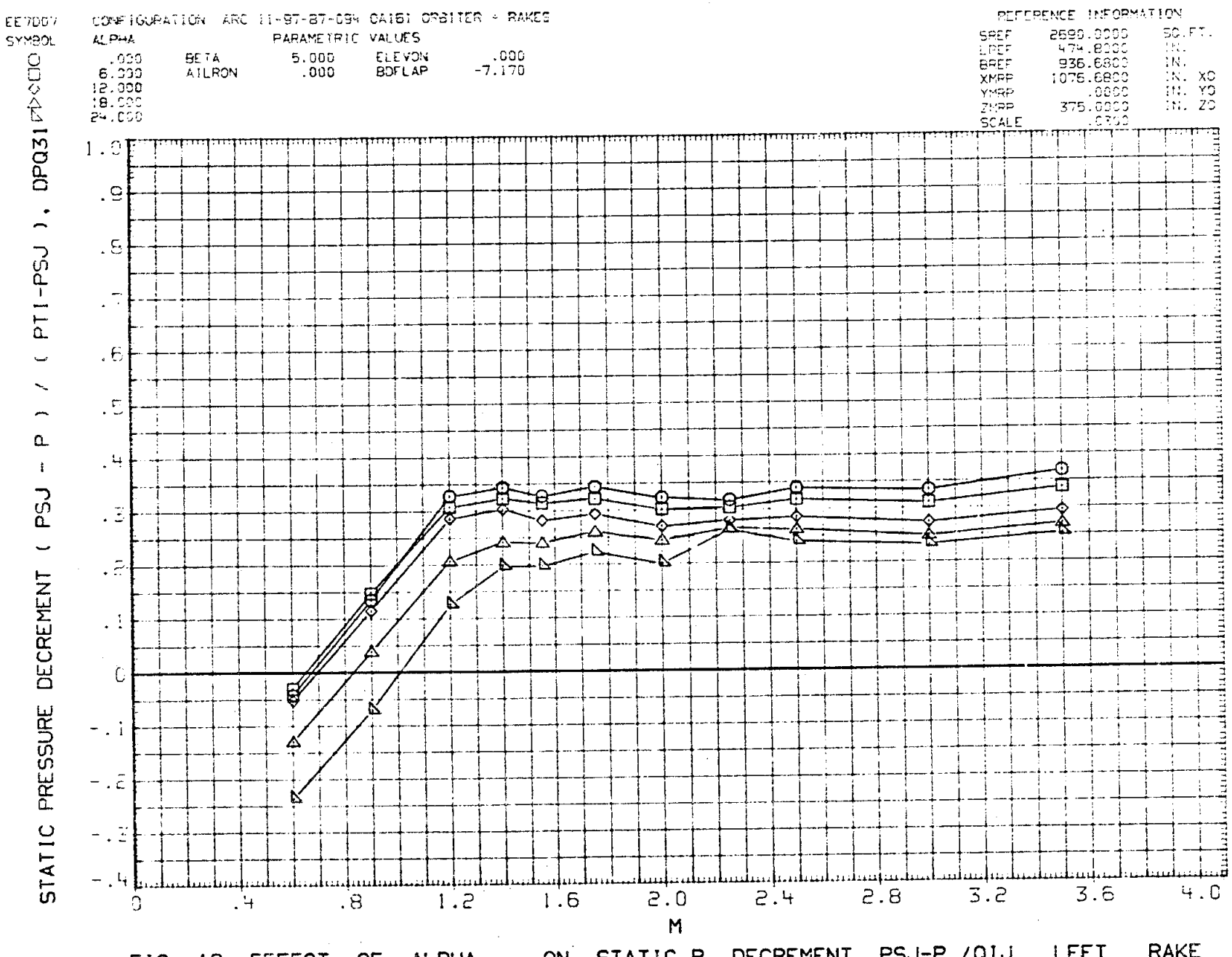


FIG. 12 EFFECT OF ALPHA ON STATIC P. DECREMENT PSJ-P /QIJ LEFT RAKE

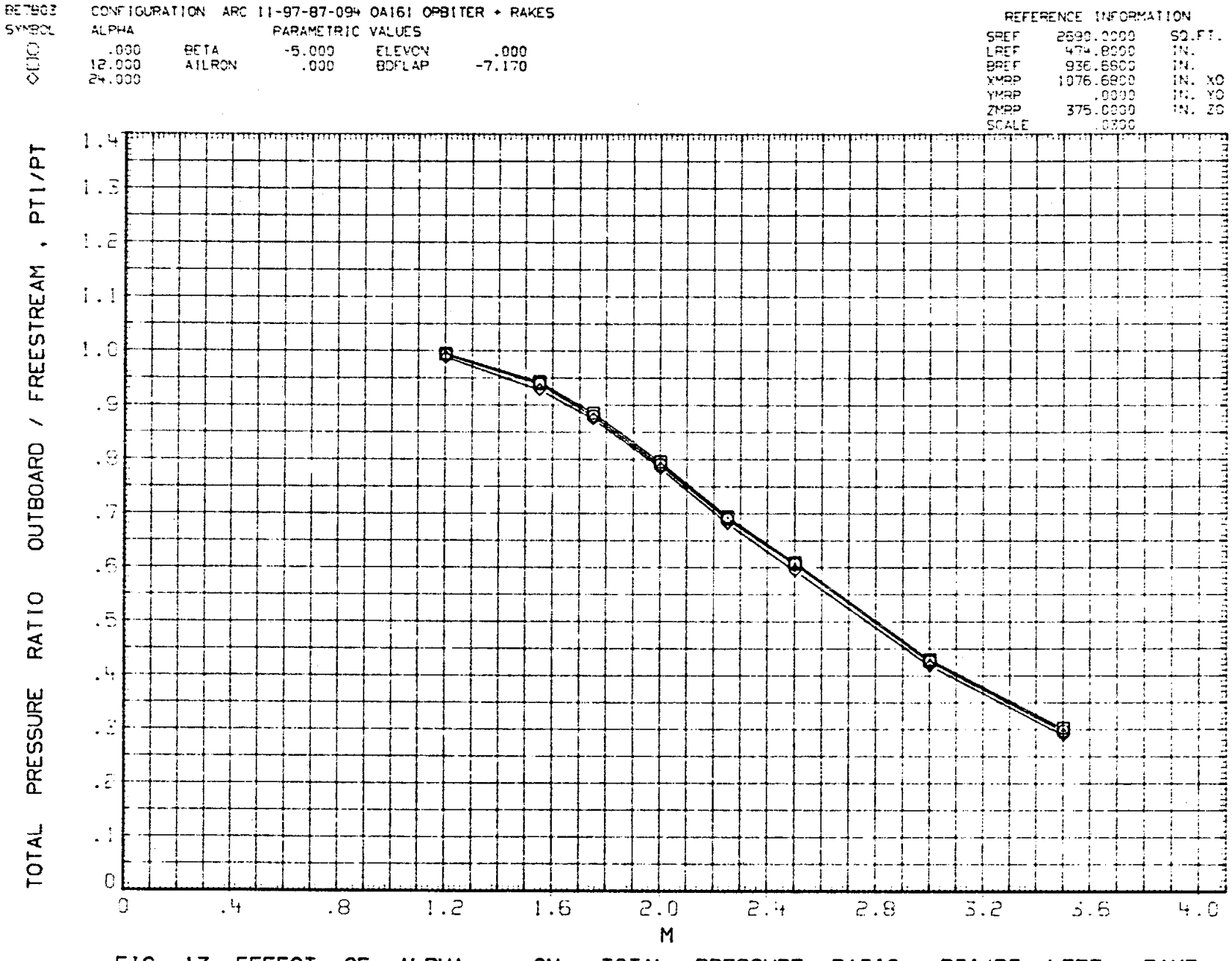


FIG. 13 EFFECT OF ALPHA ON TOTAL PRESSURE RATIO PTI/PT LEFT RAKE

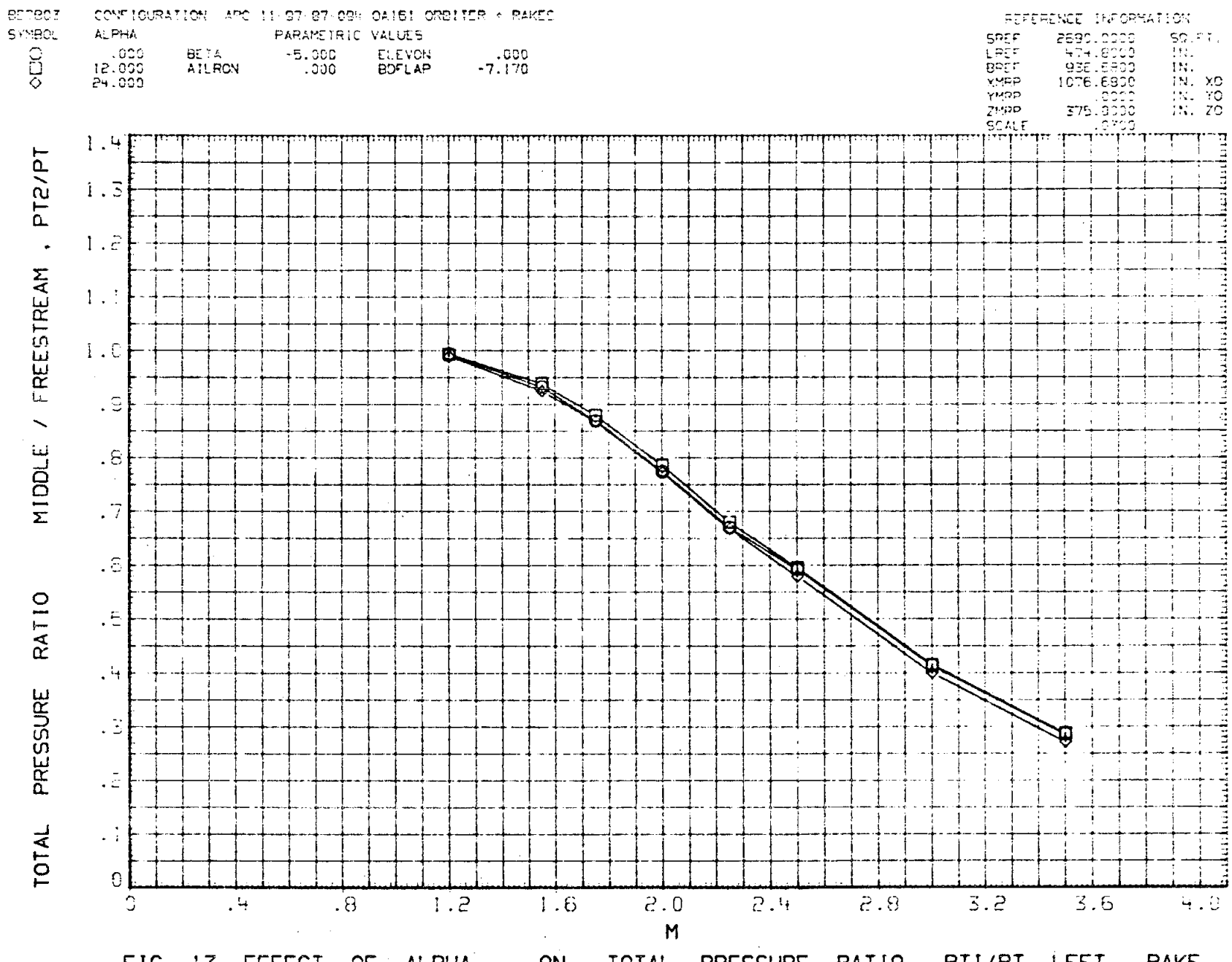


FIG. 13 EFFECT OF ALPHA ON TOTAL PRESSURE RATIO PTI/PT LEFT RAKE

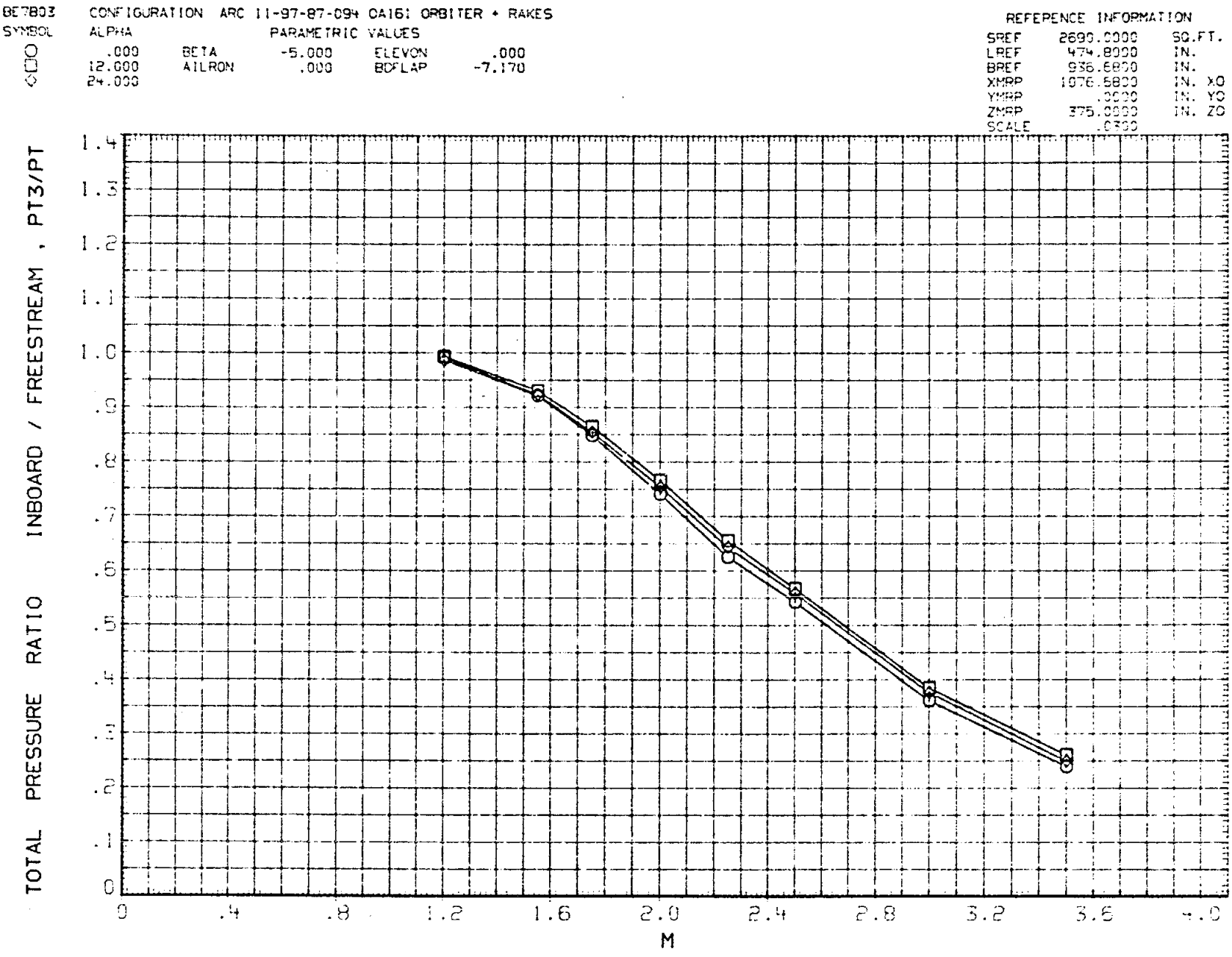


FIG. 13 EFFECT OF ALPHA ON TOTAL PRESSURE RATIO PTI/PT LEFT RAKE

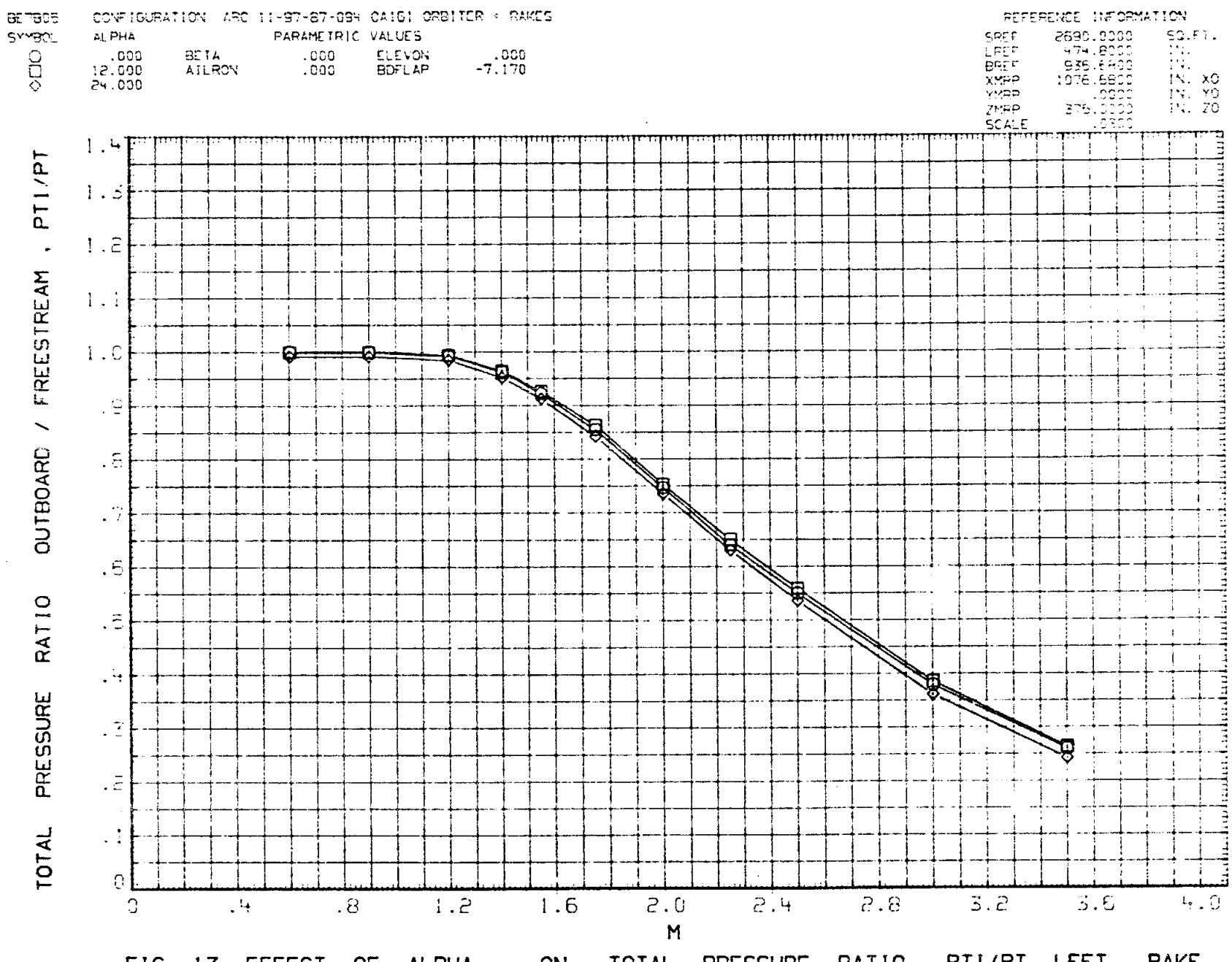


FIG. 13 EFFECT OF ALPHA ON TOTAL PRESSURE RATIO PTI/PT LEFT RAKE

BE7805 CONFIGURATION ARC 11-97-87-094 OA161 ORBITER + RAKES

SYMBOL	ALPHA	PARAMETRIC VALUES			
◇□○	.000	BETA	.000	ELEVON	.000
	12.000	AILRON	.000	BDFLAP	-7.170
	24.000				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

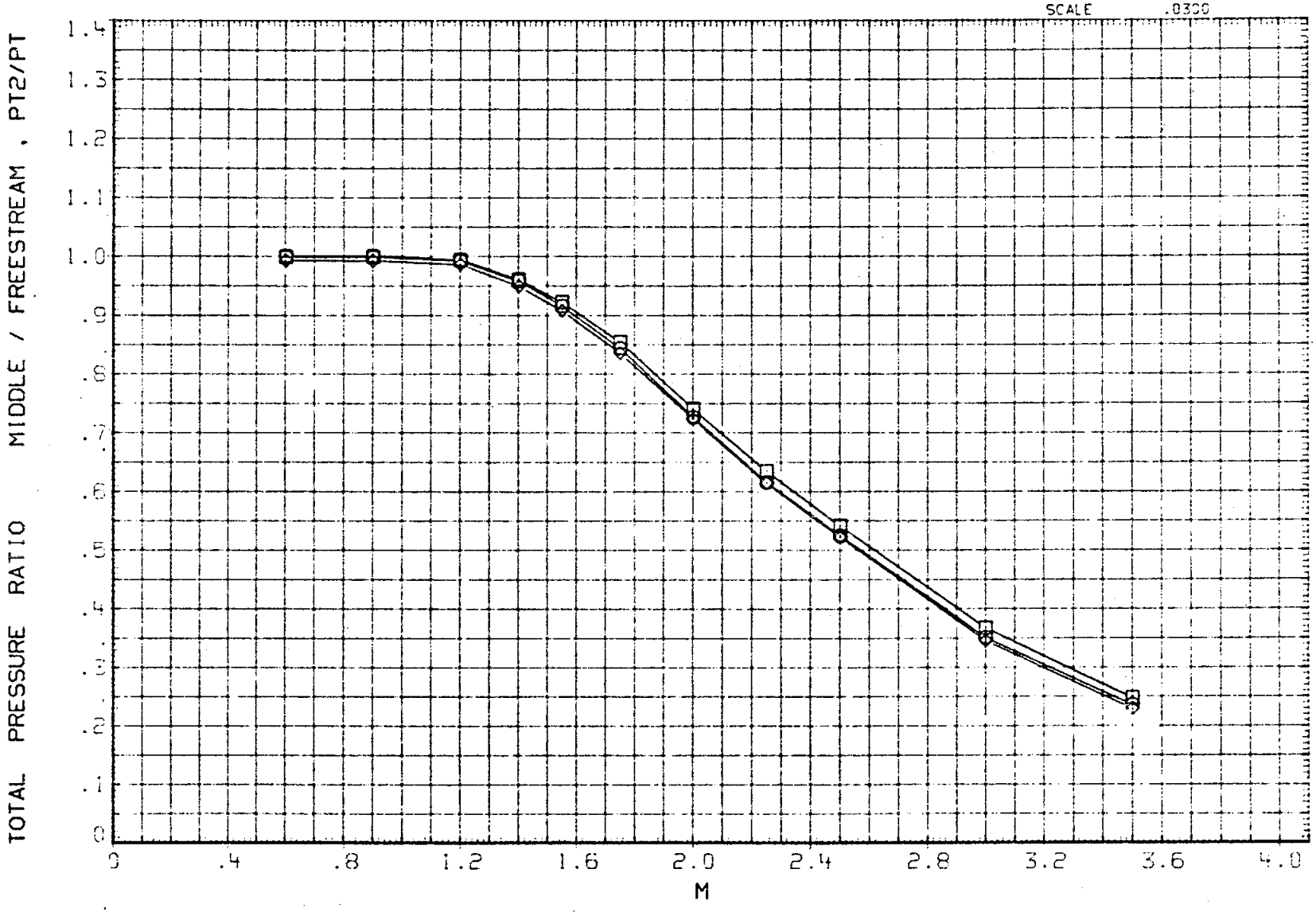


FIG. 13 EFFECT OF ALPHA ON TOTAL PRESSURE RATIO PTI/PT LEFT RAKE

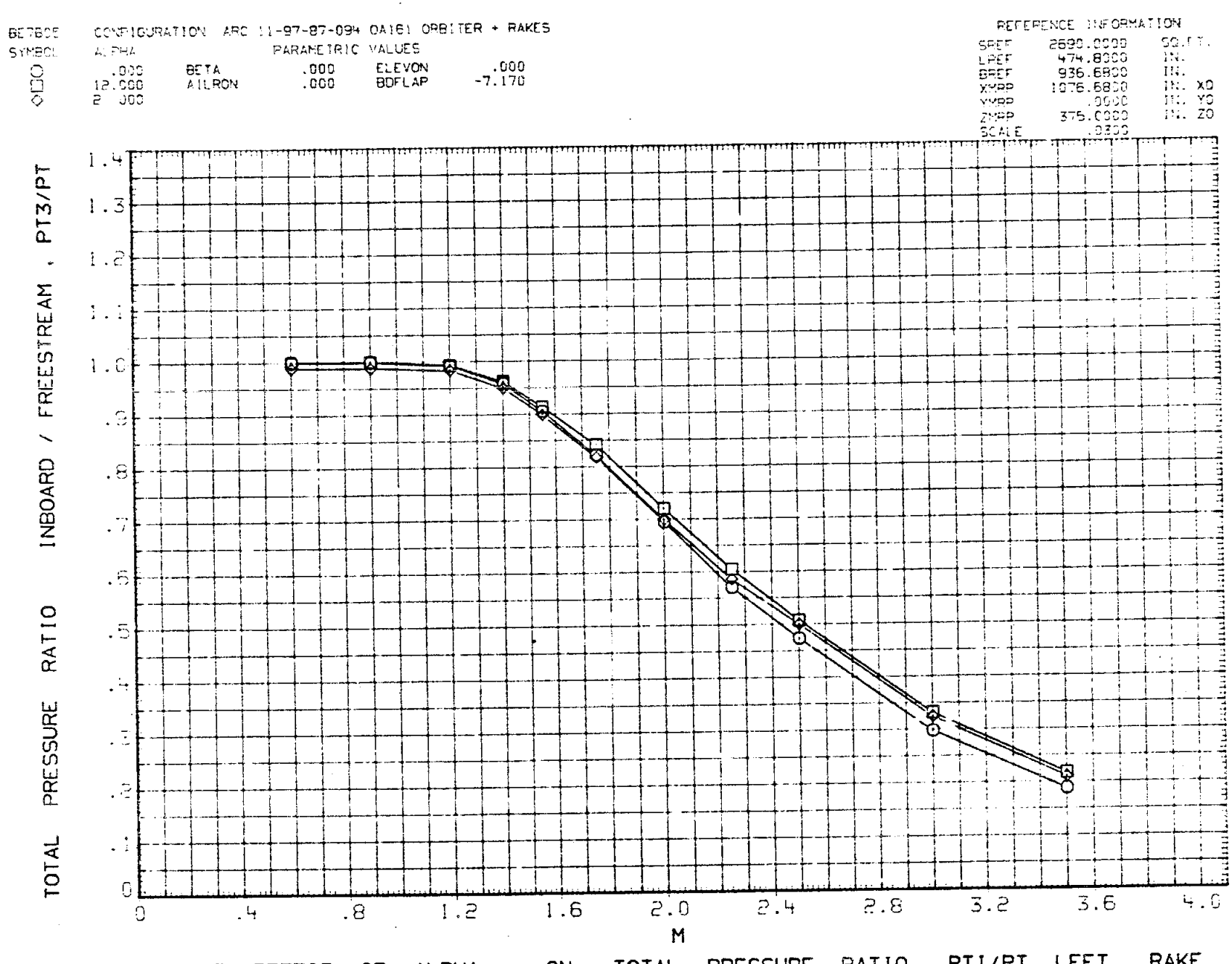


FIG. 13 EFFECT OF ALPHA ON TOTAL PRESSURE RATIO PTI/PT LEFT RAKE

BE7807 CONFIGURATION ARC 11-97-87-094 OA161 ORBITER + RAKES

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	.000	BETA	5.000	ELEVON	.000
□	12.000	AILRON	.000	BDFLAP	-7.170
◇	24.000				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	575.0000	IN. ZO
SCALE	.0300	

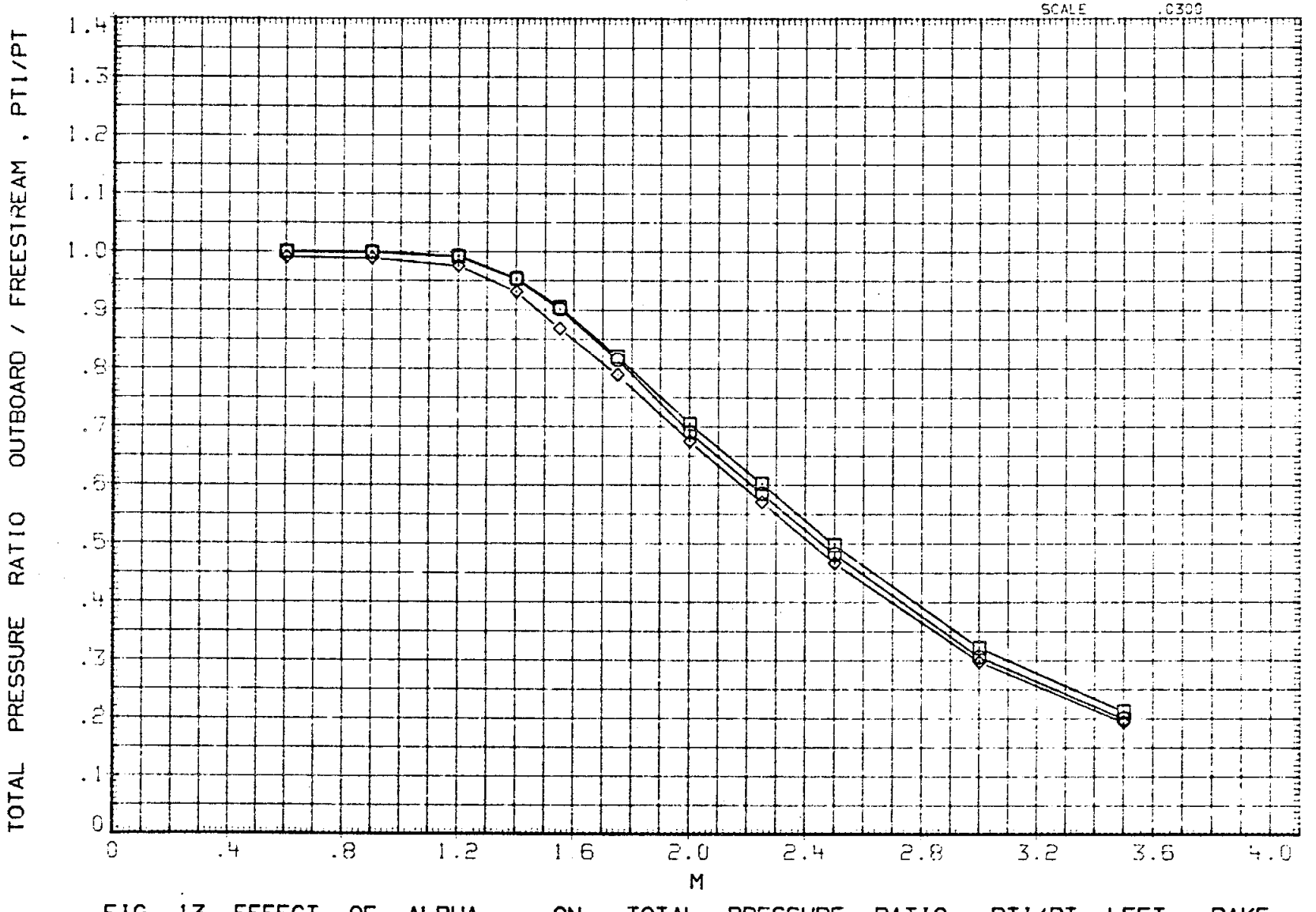


FIG. 13 EFFECT OF ALPHA ON TOTAL PRESSURE RATIO PTI/PT LEFT RAKE

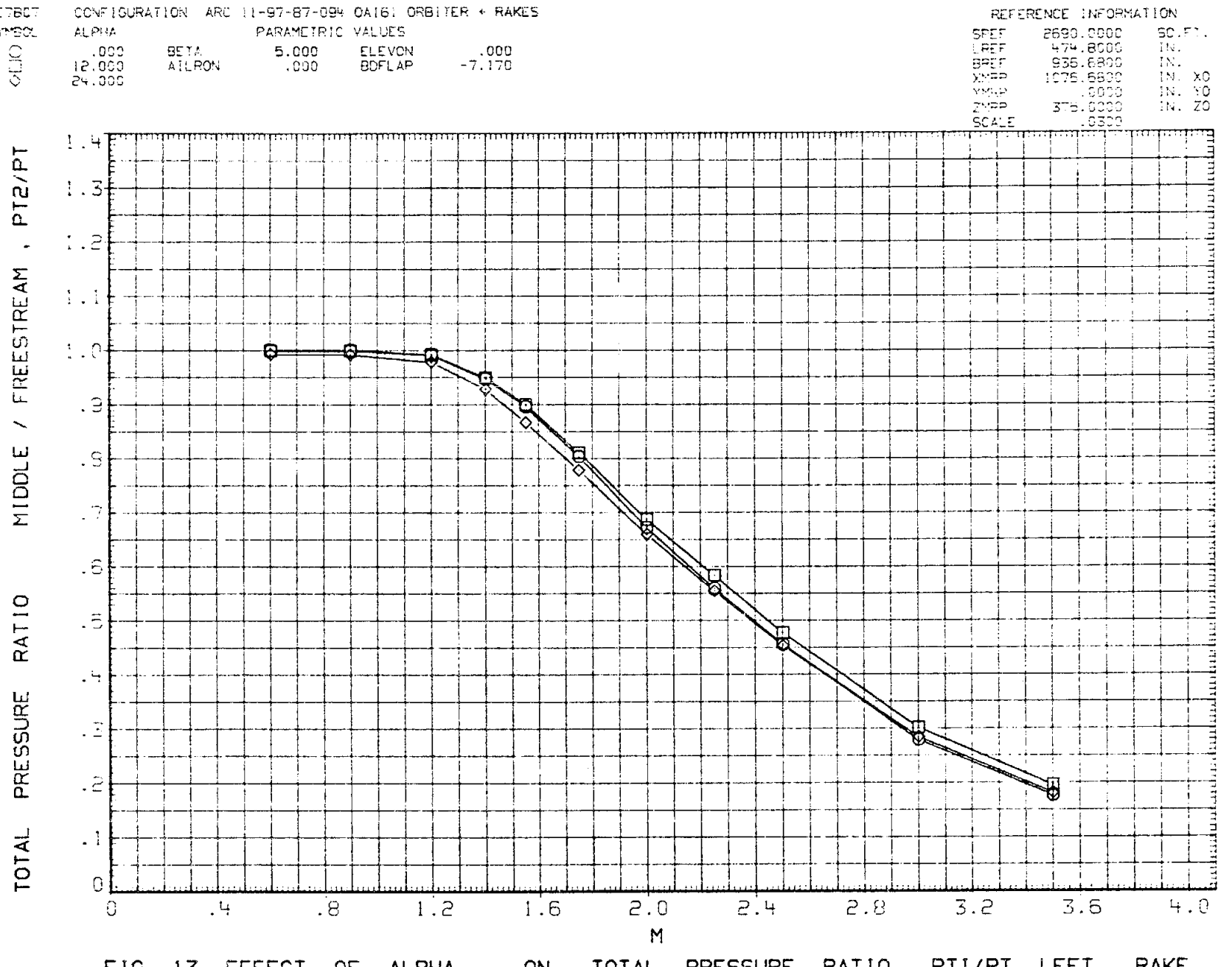


FIG. 13 EFFECT OF ALPHA ON TOTAL PRESSURE RATIO PTI/PT LEFT RAKE

BE7B07 CONFIGURATION ARC 11-97-87-094 0A161 ORBITER + RAKES

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	.000	BETA	5.000	ELEVON	.000
◇	12.000	AILRON	.000	BDFLAP	-7.170
	24.000				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

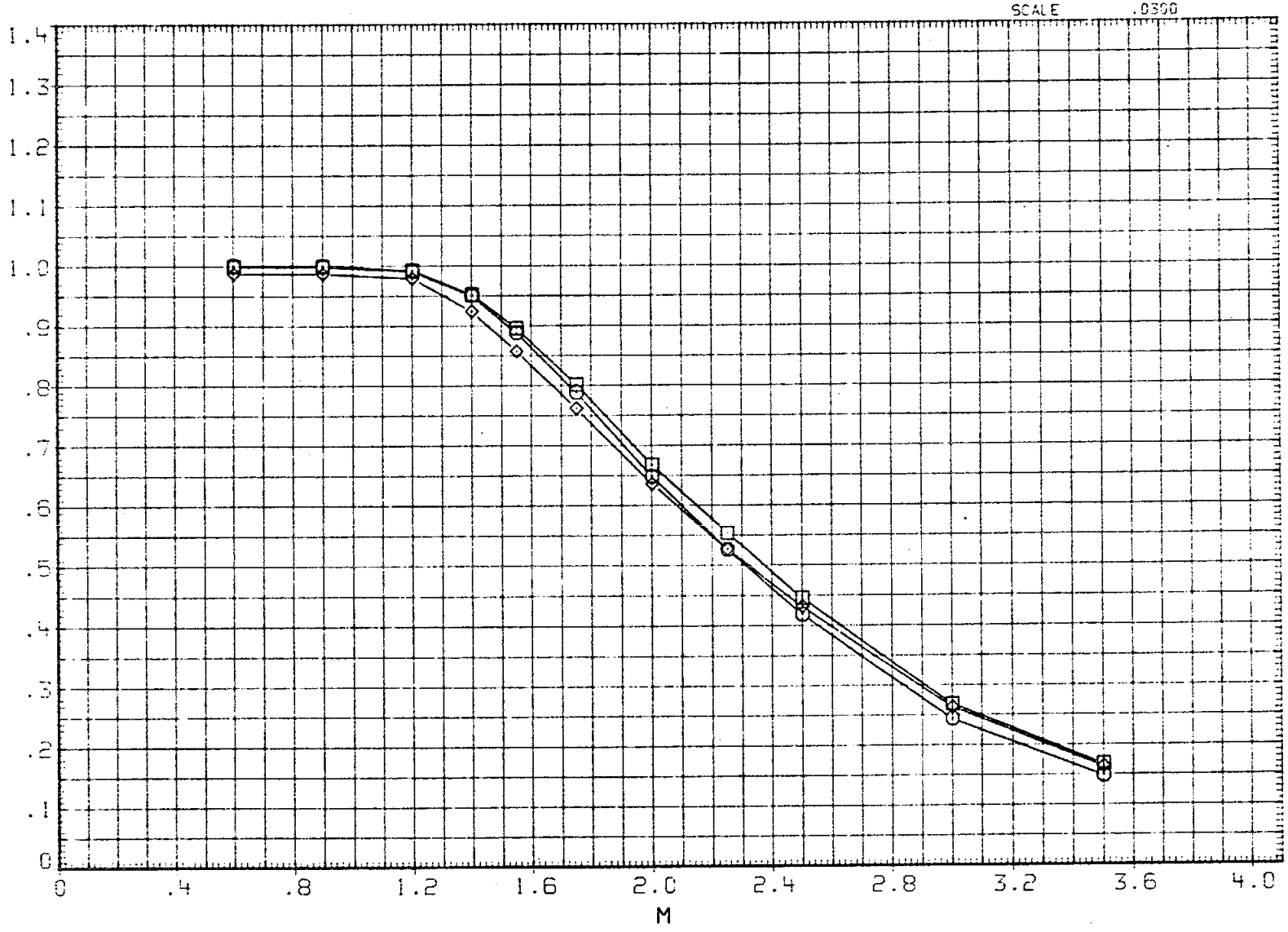


FIG. 13 EFFECT OF ALPHA ON TOTAL PRESSURE RATIO PTI/PT LEFT RAKE

REFNOS CONFIGURATION ARC 11-87-87-098 DATA7 ORBITER + RAKES

SYMBOL ALPHA PARAMETRIC VALUES

.000	BETA	-5.000	ELEVON	.000
12.000	AILRON	.000	BDFLAP	-7.170
24.000				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.6000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

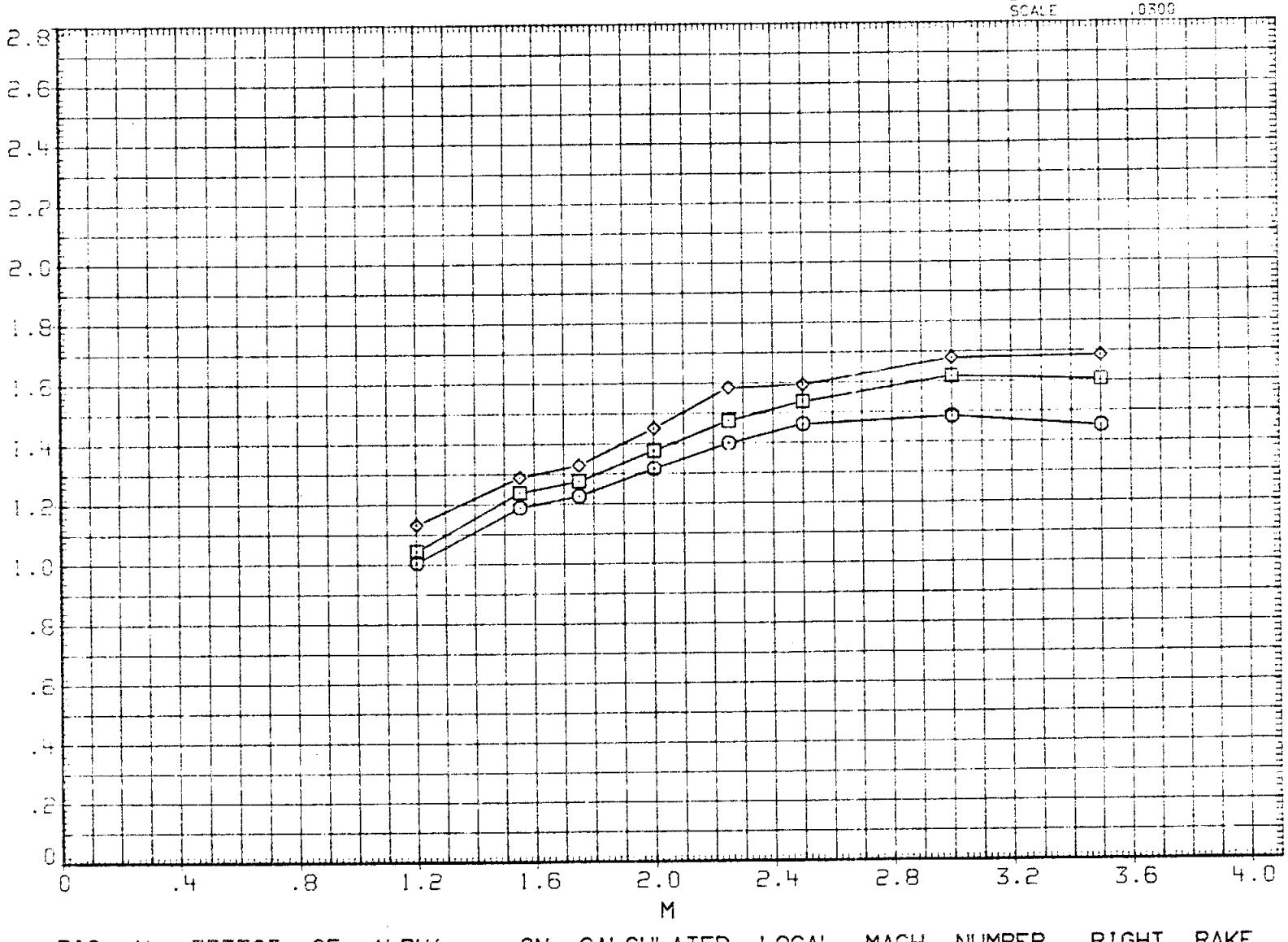


FIG. 14 EFFECT OF ALPHA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

FE7X03 CONFIGURATION ARC 11-97-87-094 OA161 ORBITER + RAKES

SYMBOL	ALPHA		PARAMETRIC VALUES		
◇	.000	BETA	-5.000	ELEVON	.000
□	12.000	AILRON	.000	BDFLAP	-7.170
○	24.000				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

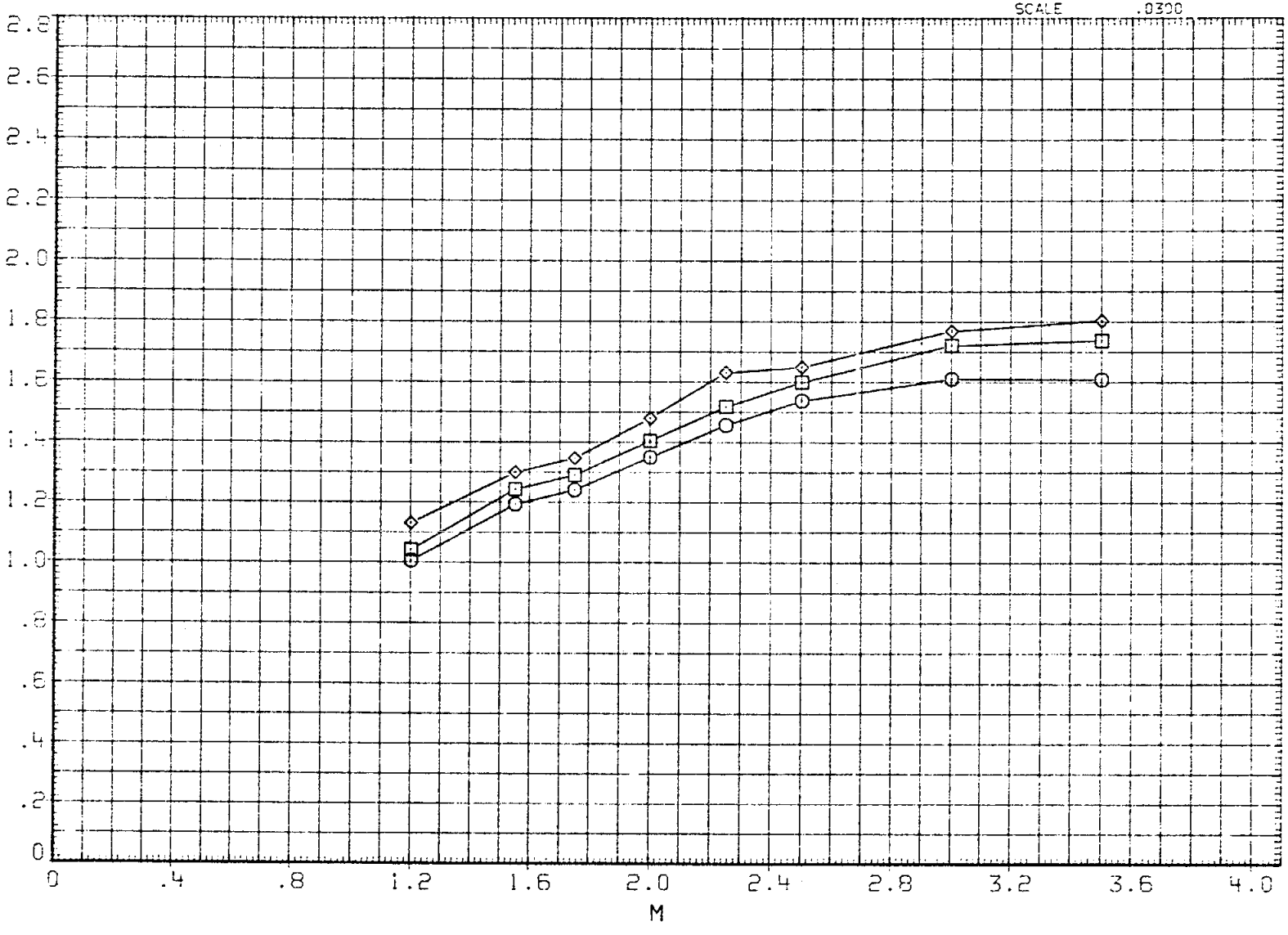


FIG. 14 EFFECT OF ALPHA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

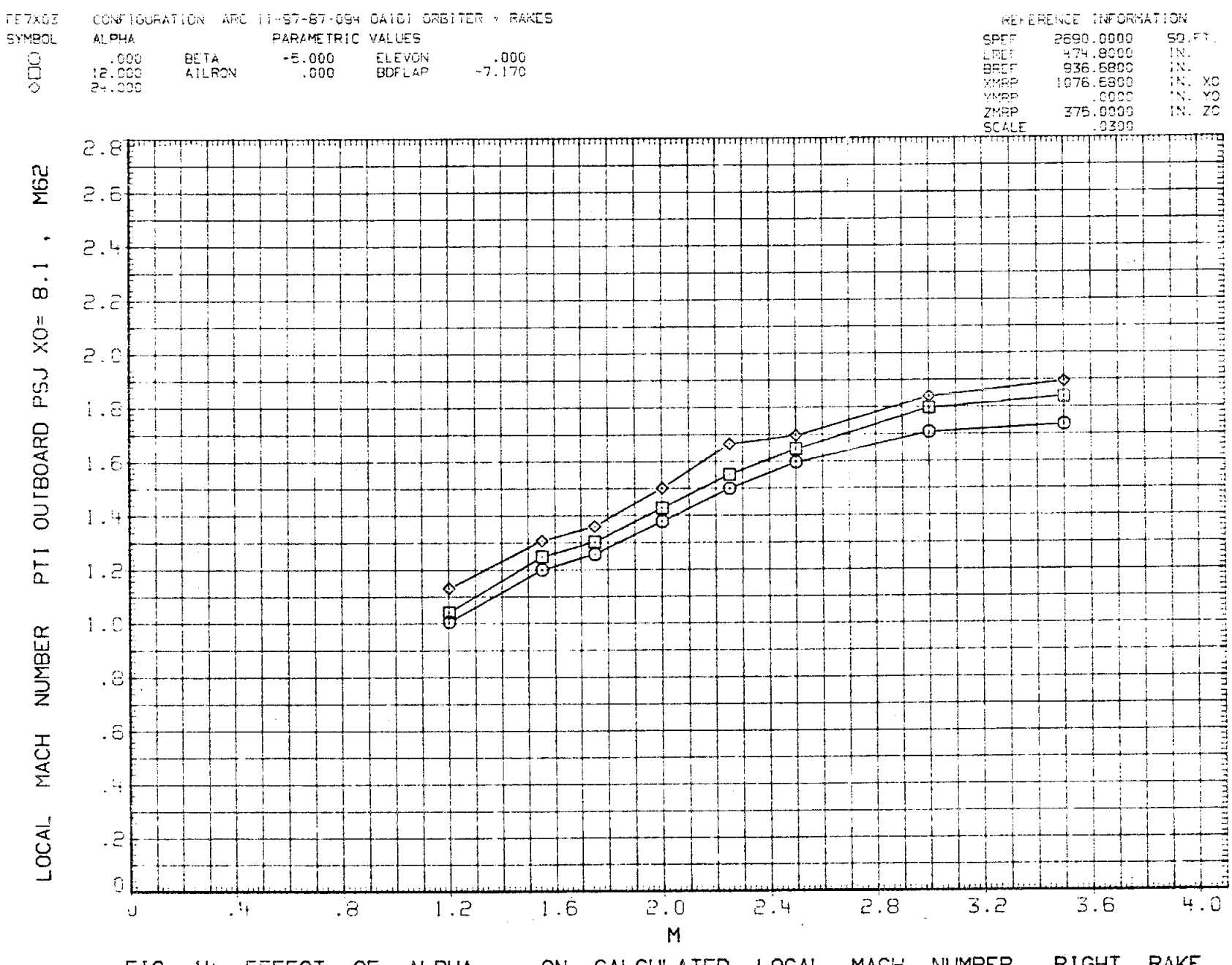


FIG. 14 EFFECT OF ALPHA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

FE7X03 CONFIGURATION ARC 11-97-87-094 OA161 ORBITER + RAKES

SYMBOL ALPHA PARAMETRIC VALUES

◇ .000 BETA -5.000 ELEVON .000
□ 12.000 AILRON .000 BDFLAP -7.170
○ 24.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

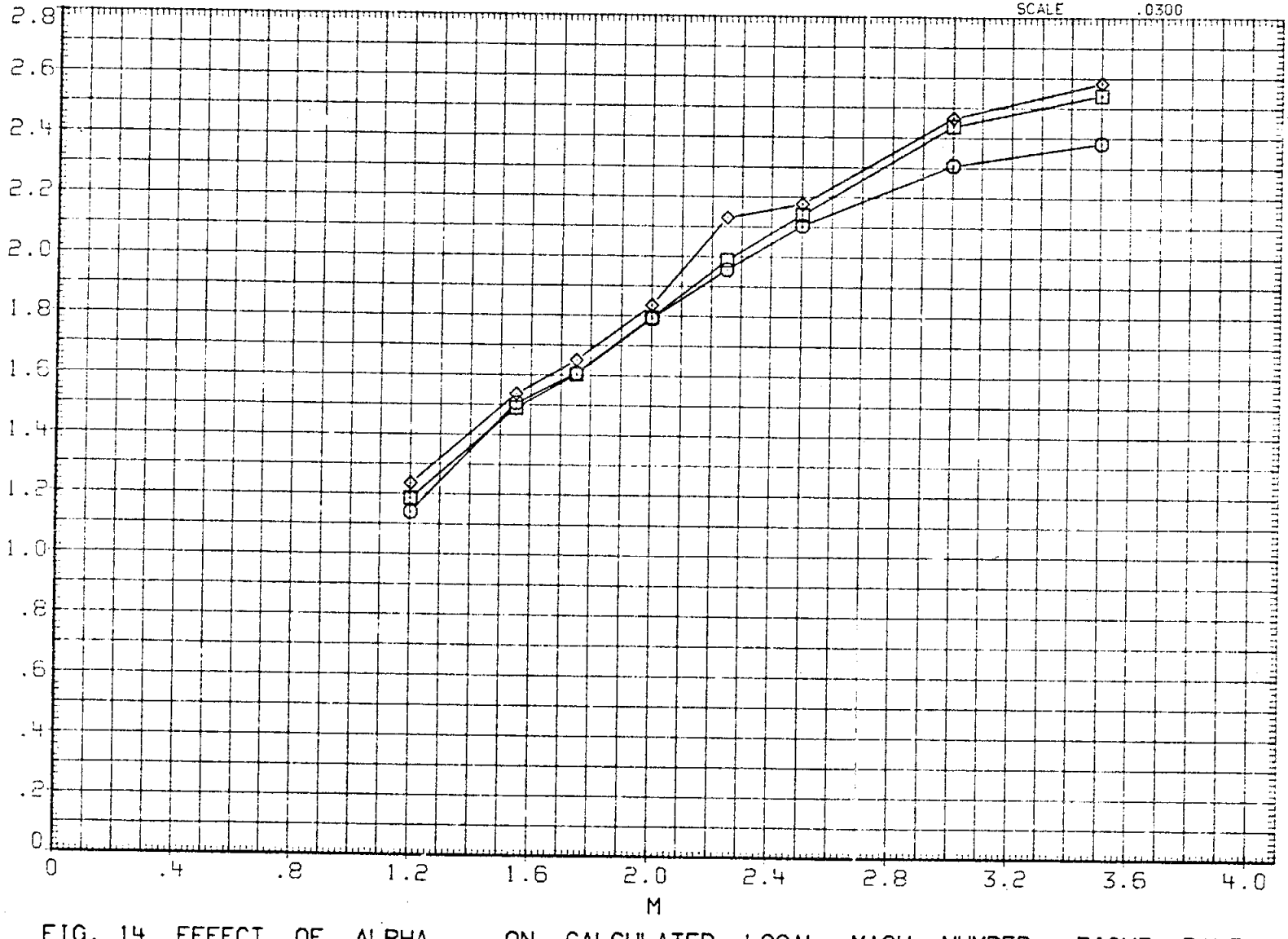


FIG. 14 EFFECT OF ALPHA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

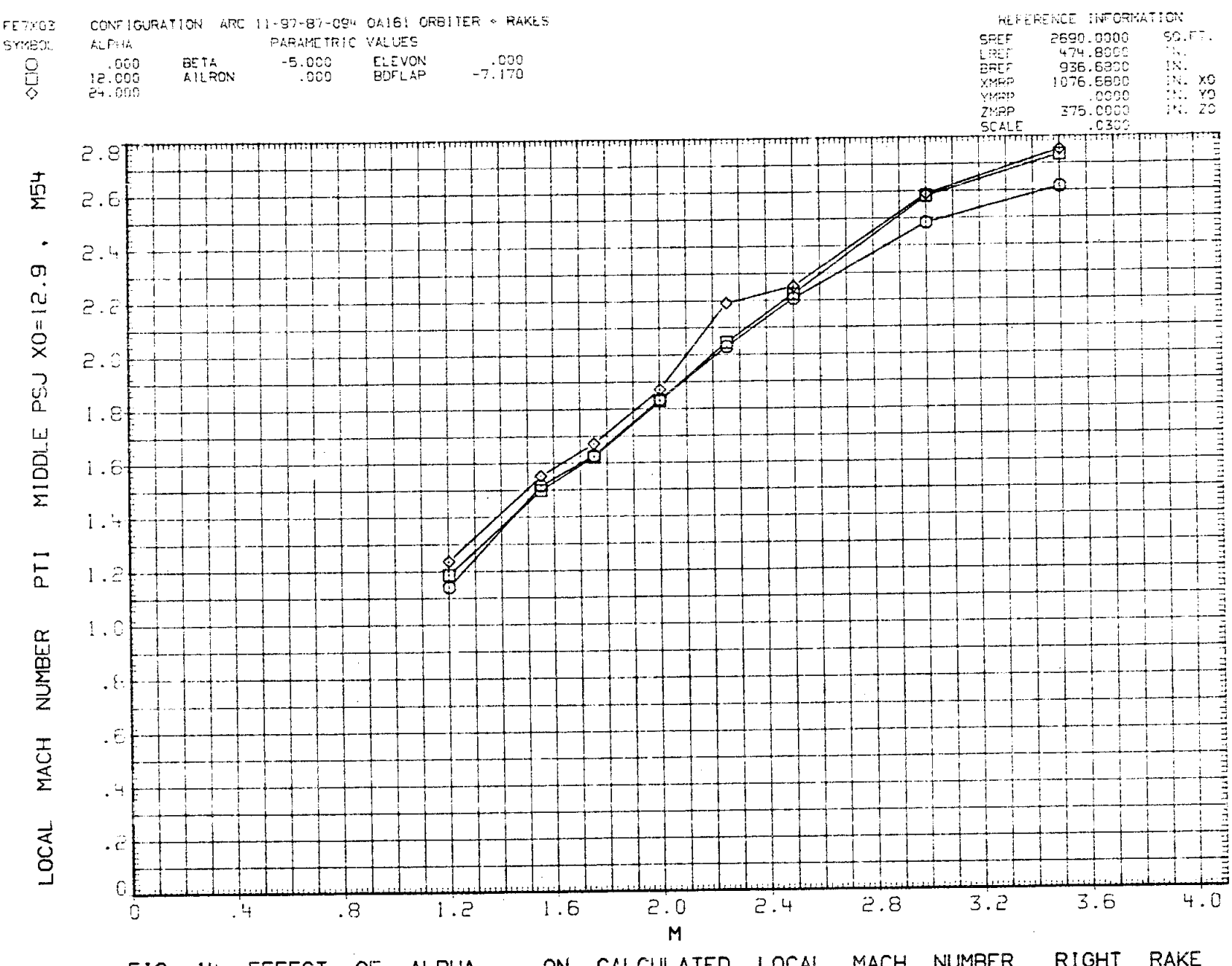


FIG. 14 EFFECT OF ALPHA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

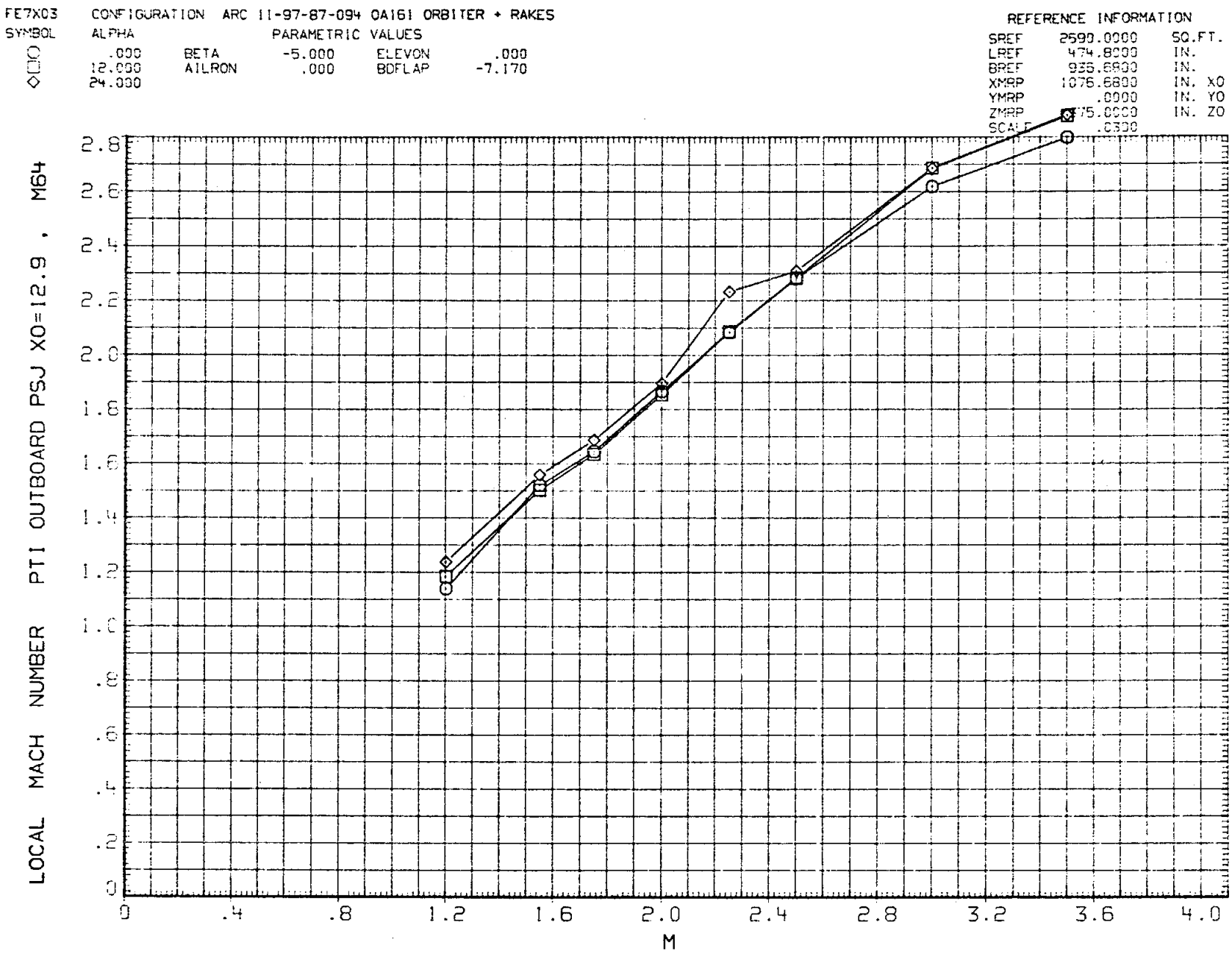


FIG. 14 EFFECT OF ALPHA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

FE7X05 CONFIGURATION ARC 11-97-87-094 OA161 ORBITER + RAKES

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	.000	BETA	.000	ELEVON	.000
□	12.000	AILRON	.000	BDFLAP	-7.170
◇	24.000				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

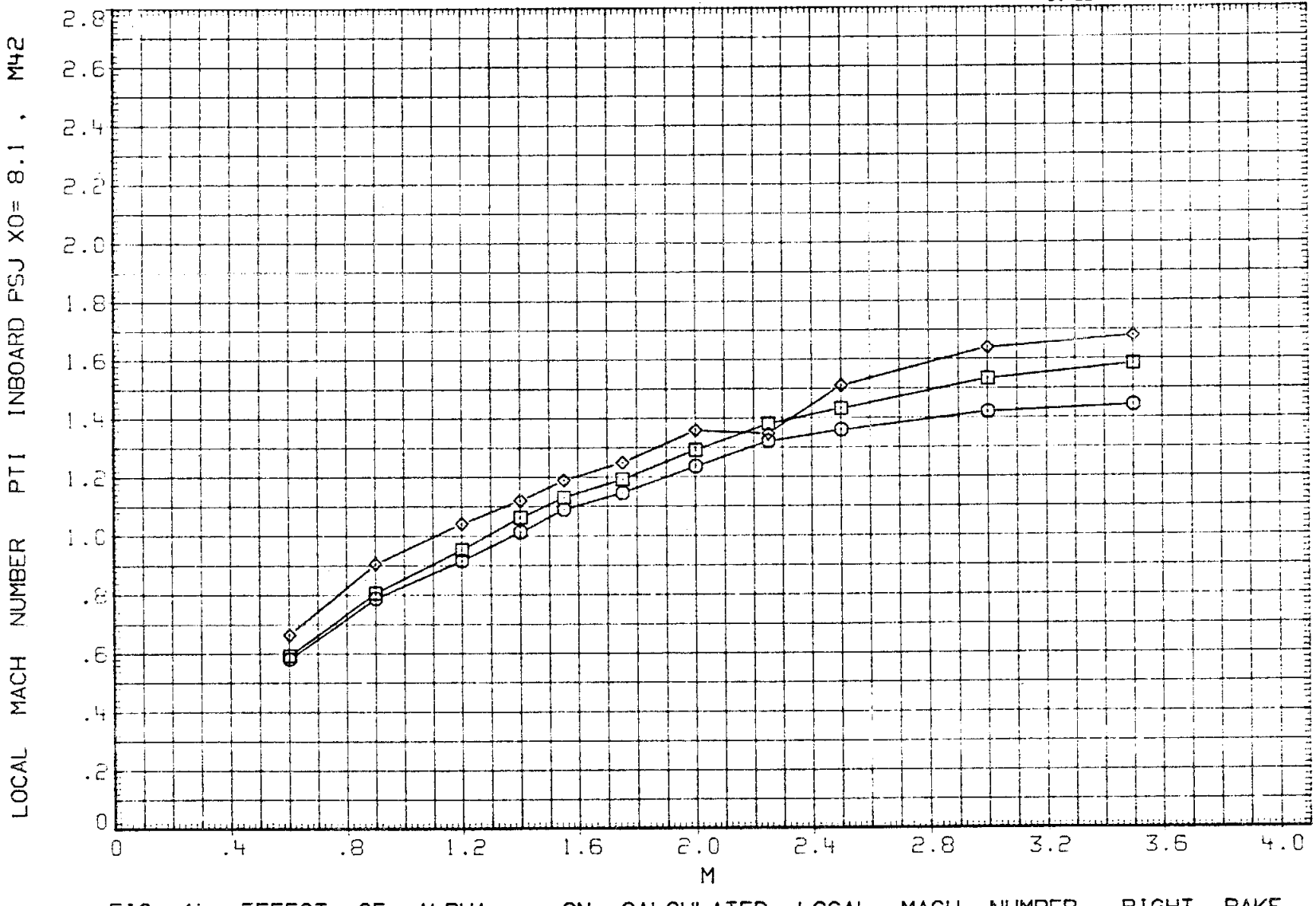


FIG. 14 EFFECT OF ALPHA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

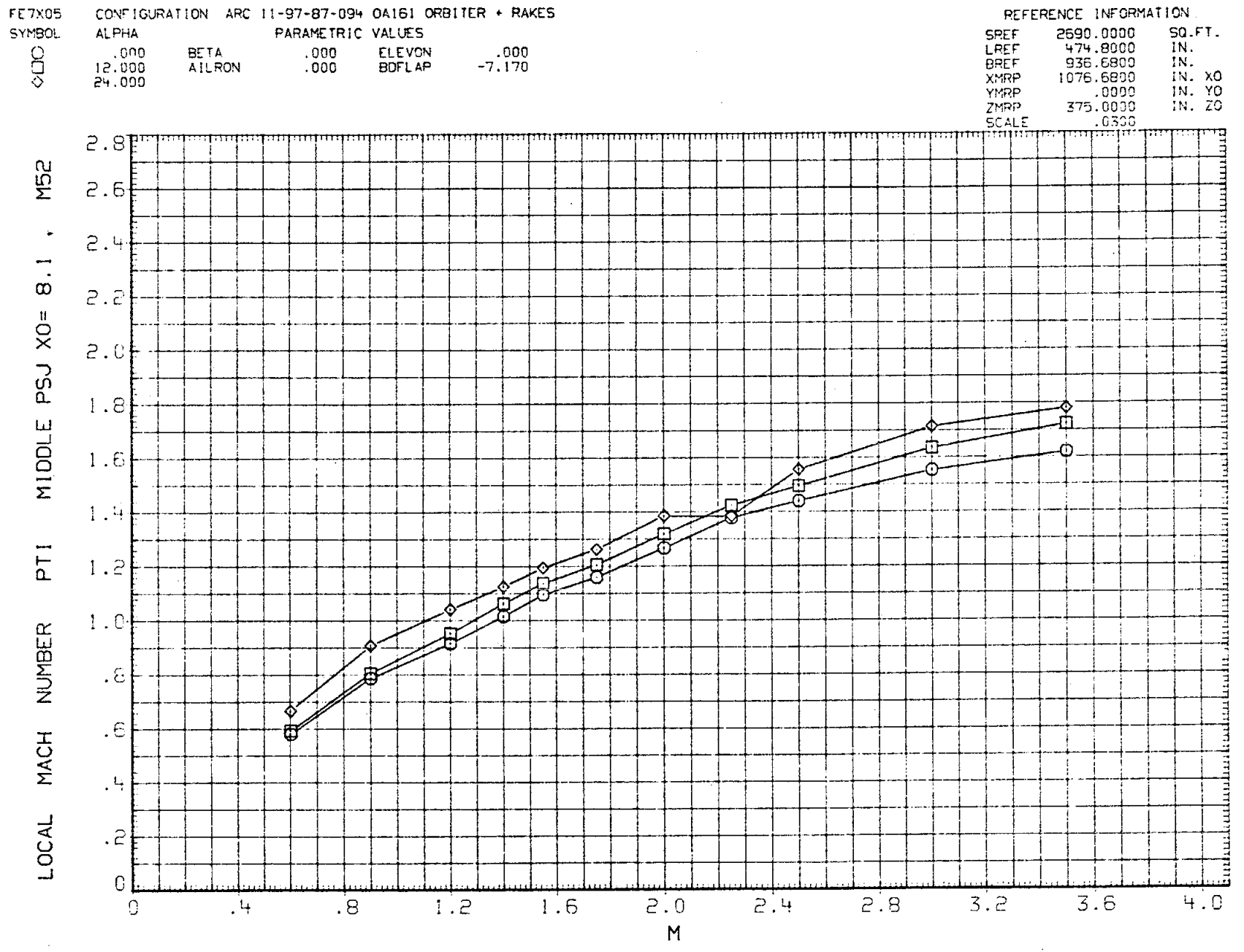


FIG. 14 EFFECT OF ALPHA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

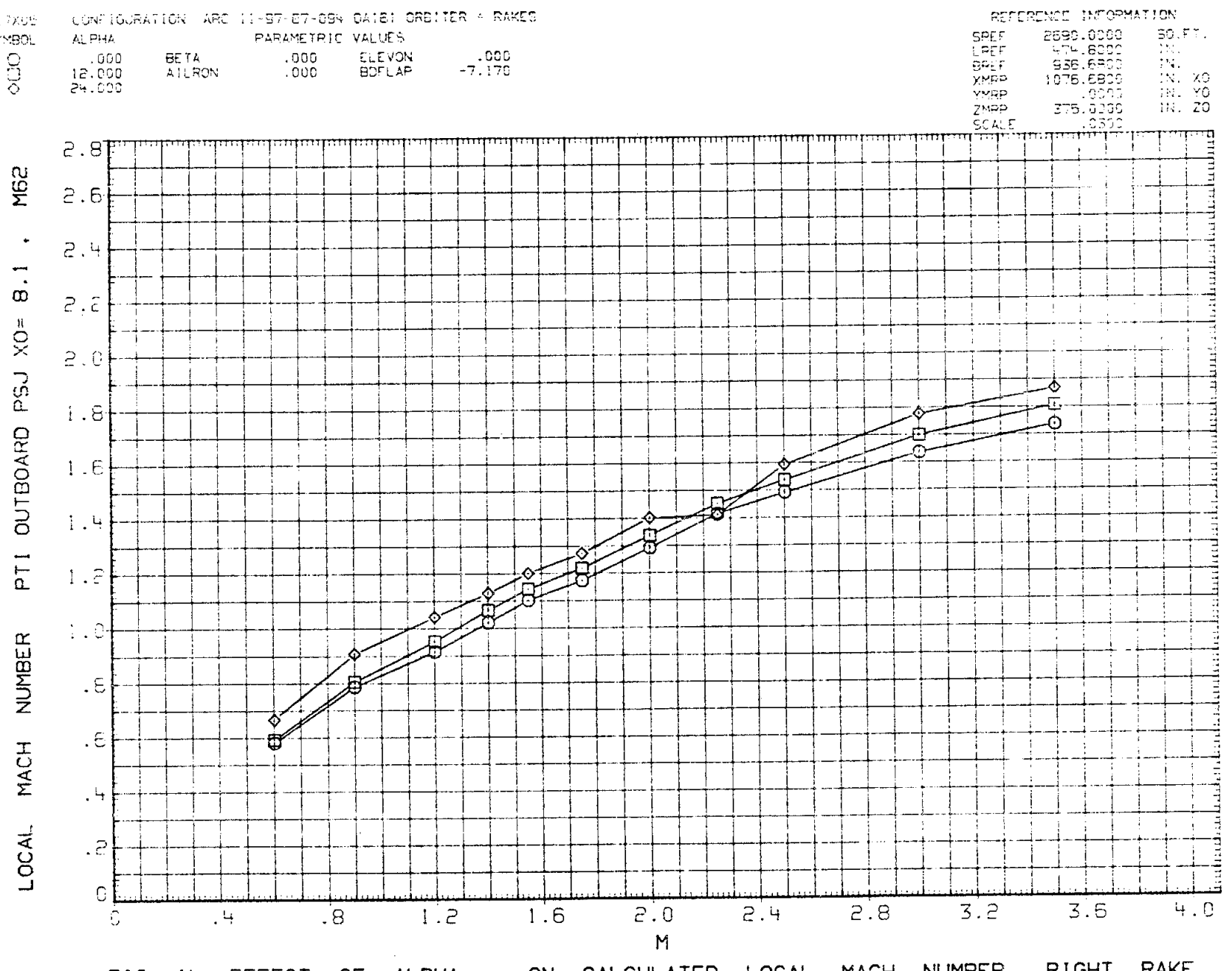


FIG. 14 EFFECT OF ALPHA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

FE7X0E CONFIGURATION ARC 11-97-87-094 OA161 ORBITER + RAKES

SYMBOL	ALPHA		PARAMETRIC VALUES		
○	.000	BETA	.000	ELEVON	.000
□	12.000	AILRON	.000	BDFLAP	-7.170
◇	24.000				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

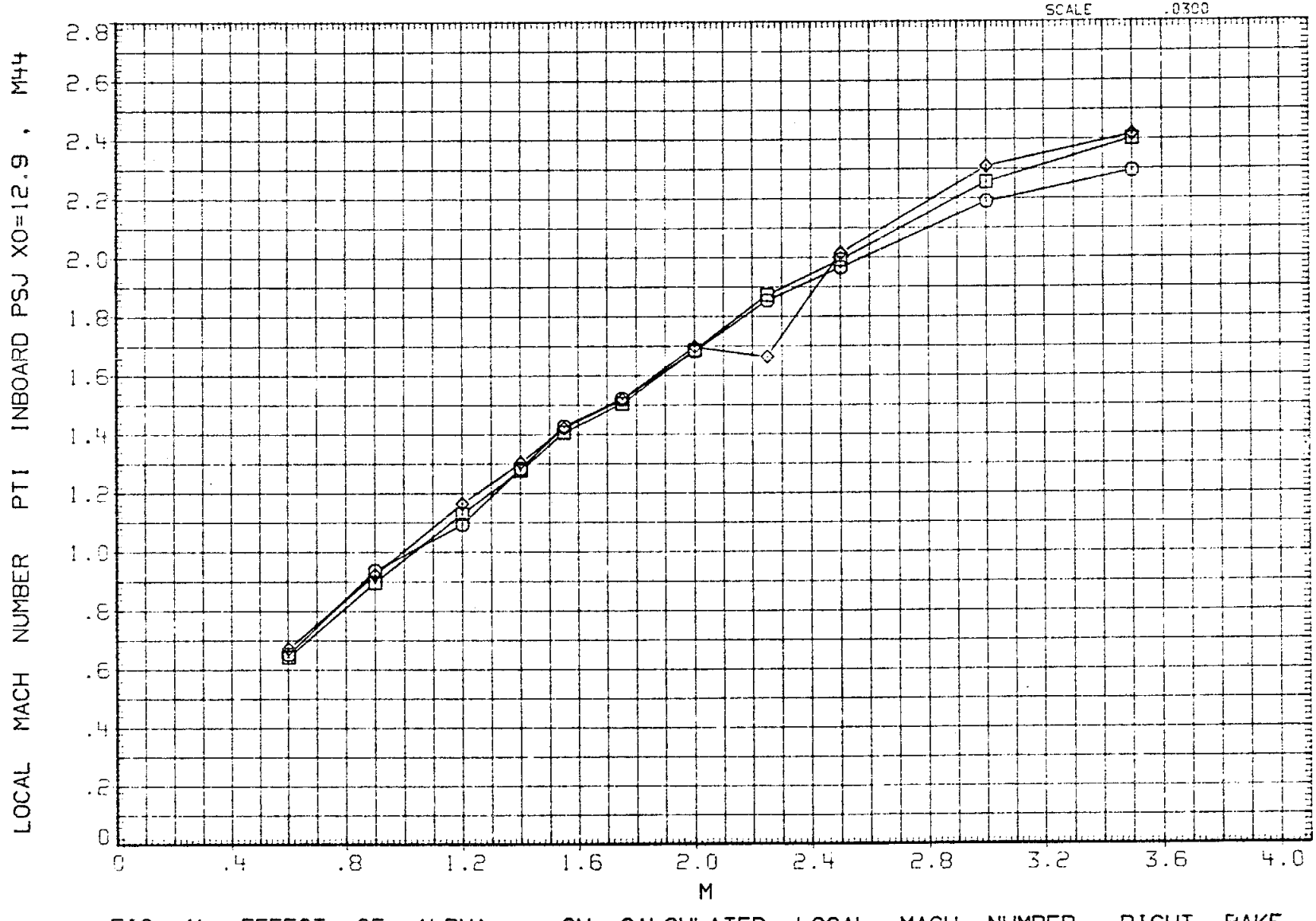


FIG. 14 EFFECT OF ALPHA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

PE7X05 CONFIGURATION ARC 11-97-87-094 OA161 ORBITER - RAKES

SYMBOL	ALPHA		PARAMETRIC VALUES		
◇□○	.000	BETA	.000	ELEVON	.000
	12.000	AILRON	.000	BDFLAP	-7.170
	24.000				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

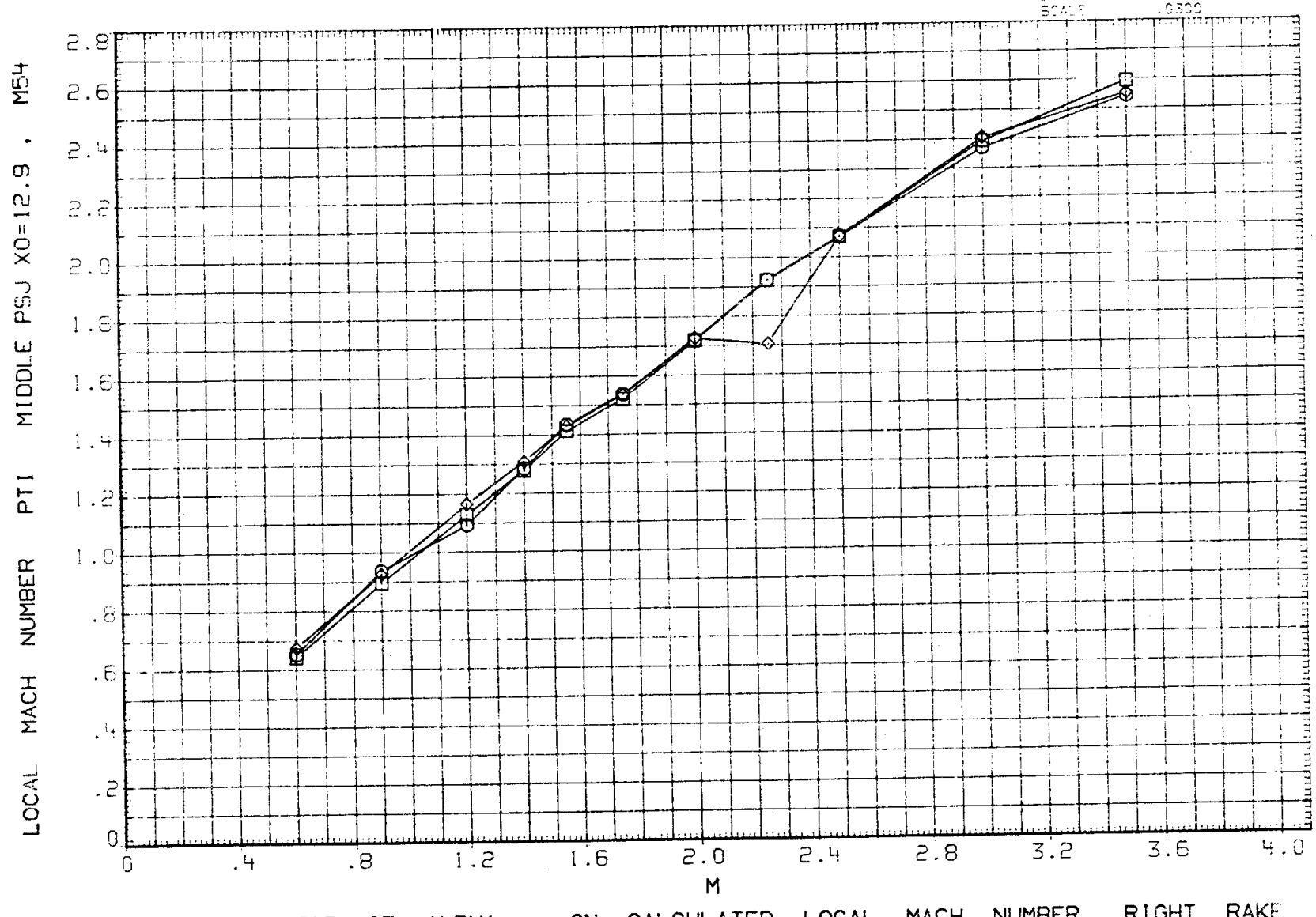


FIG. 14 EFFECT OF ALPHA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

FE7X05 CONFIGURATION ARC 11-97-87-094 OA161 ORBITER + RAKES

SYMBOL ALPHA PARAMETRIC VALUES

◇	24.000				
□	12.000	AILRON	.000	BDFLAP	-7.170
○	.000	BETA	.000	ELEVON	.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

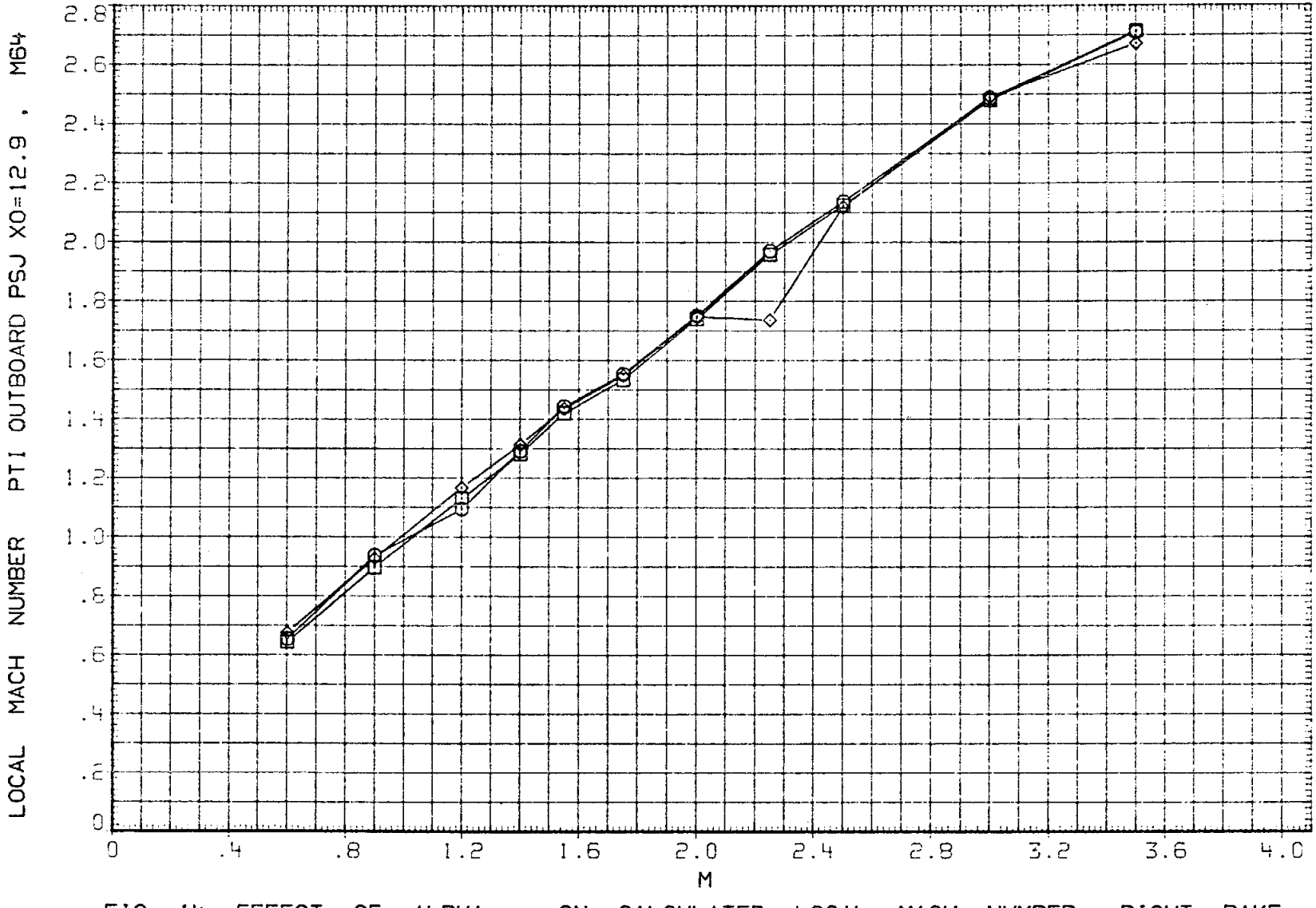


FIG. 14 EFFECT OF ALPHA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

FE7X07 CONFIGURATION ARC 11-97-87-094 OA161 ORBITER + RAKES

SYMBOL	ALPHA		PARAMETRIC VALUES		
◇	.000	BETA	5.000	ELEVON	.000
□	12.000	AILRON	.000	BDFLAP	-7.170
○	24.000				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

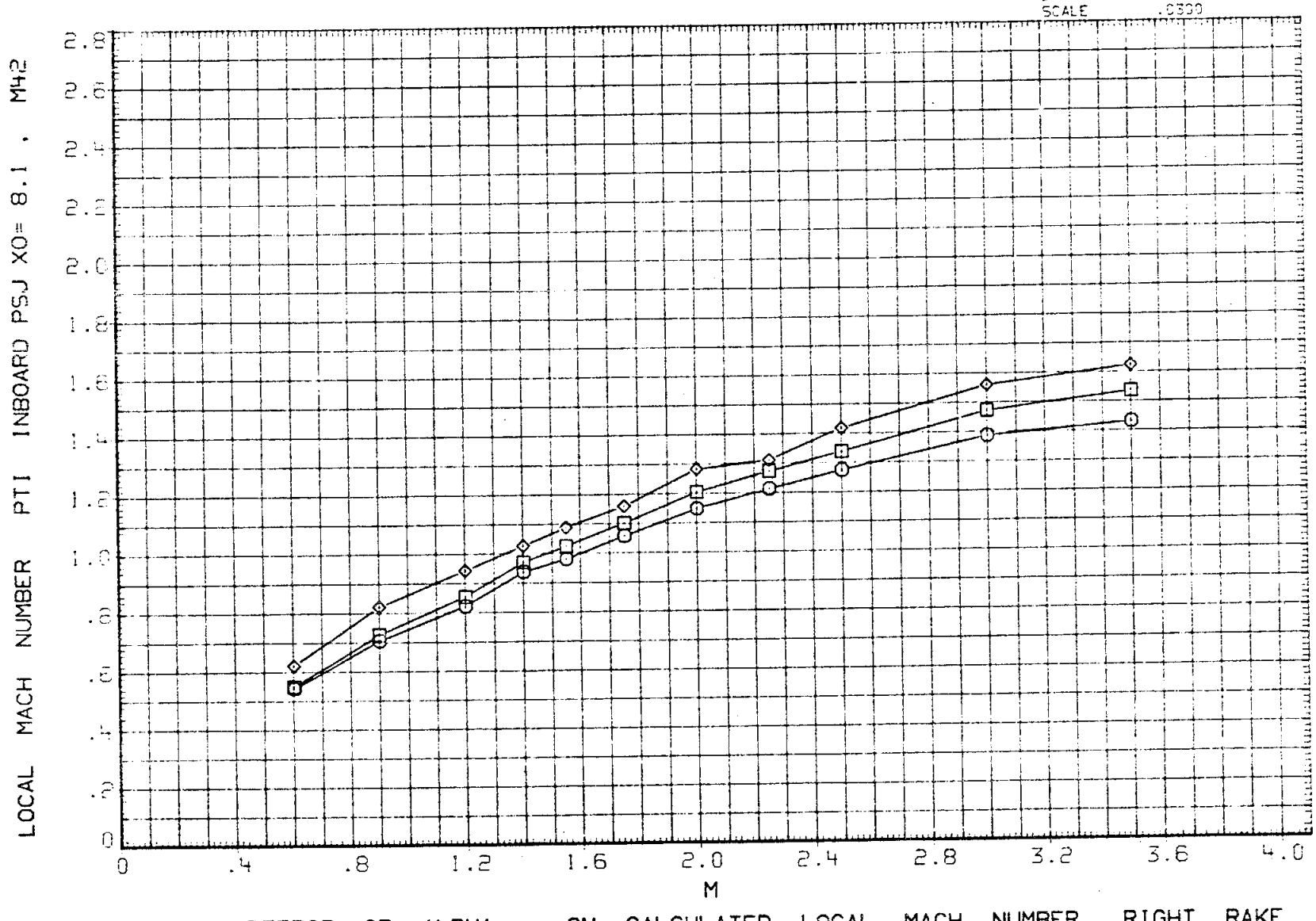


FIG. 14 EFFECT OF ALPHA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

FE7X07 CONFIGURATION ARC 11-97-87-094 OA161 ORBITER + RAKES

SYMBOL	ALPHA		PARAMETRIC VALUES		
	.000	BETA	5.000	ELEVON	.000
◇	12.000	AILRON	.000	BDFLAP	-7.170
	24.000				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

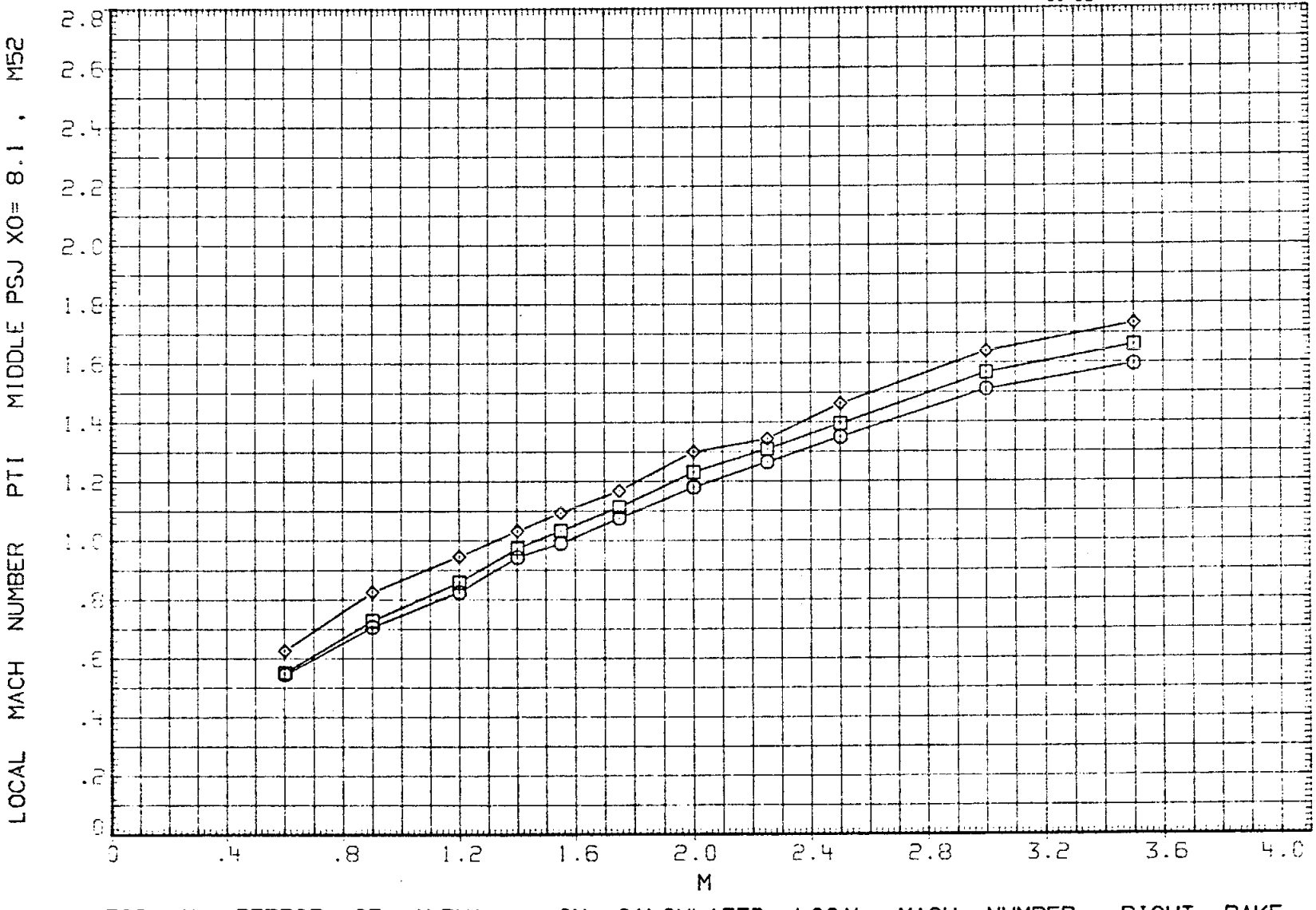


FIG. 14 EFFECT OF ALPHA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

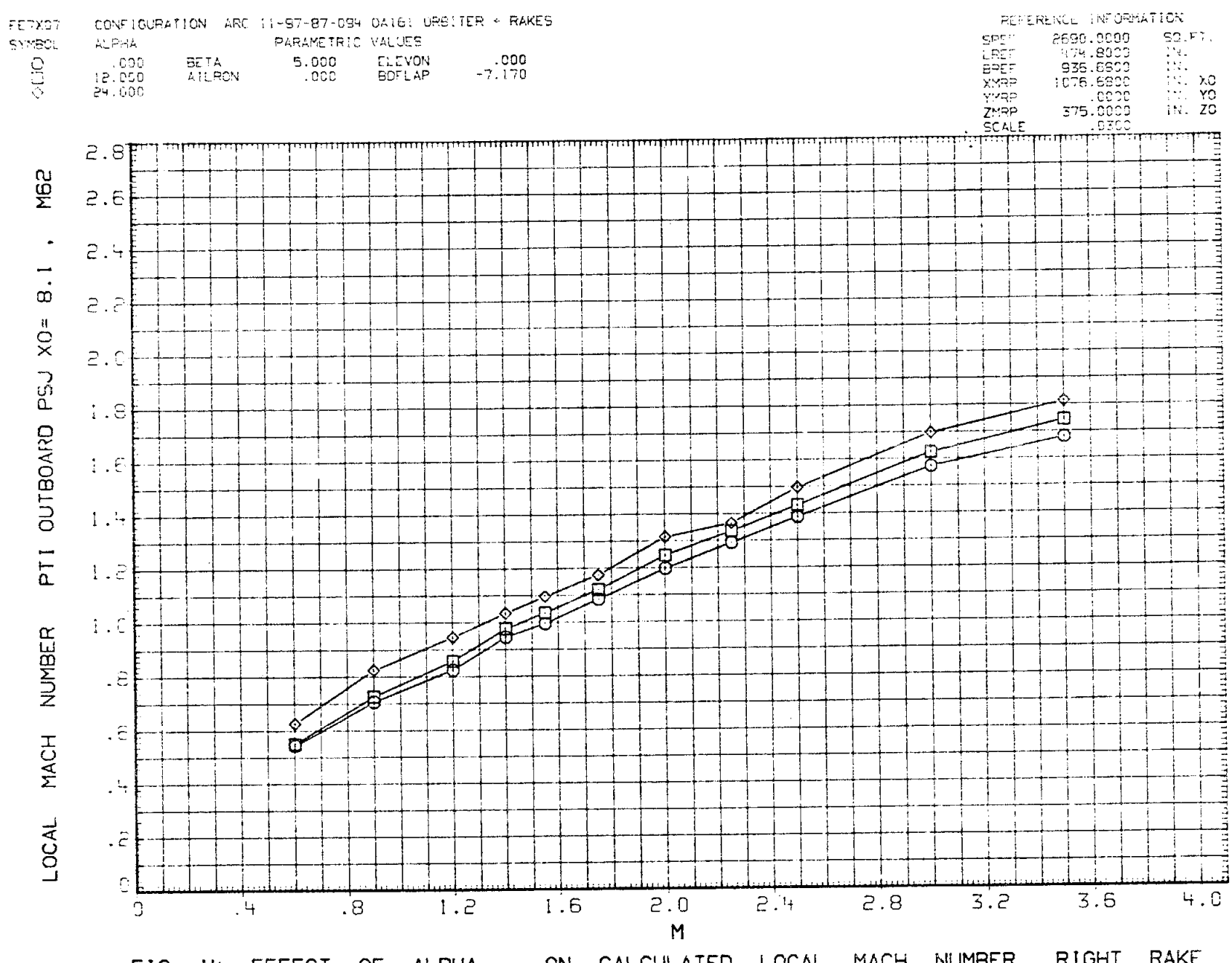


FIG. 14 EFFECT OF ALPHA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

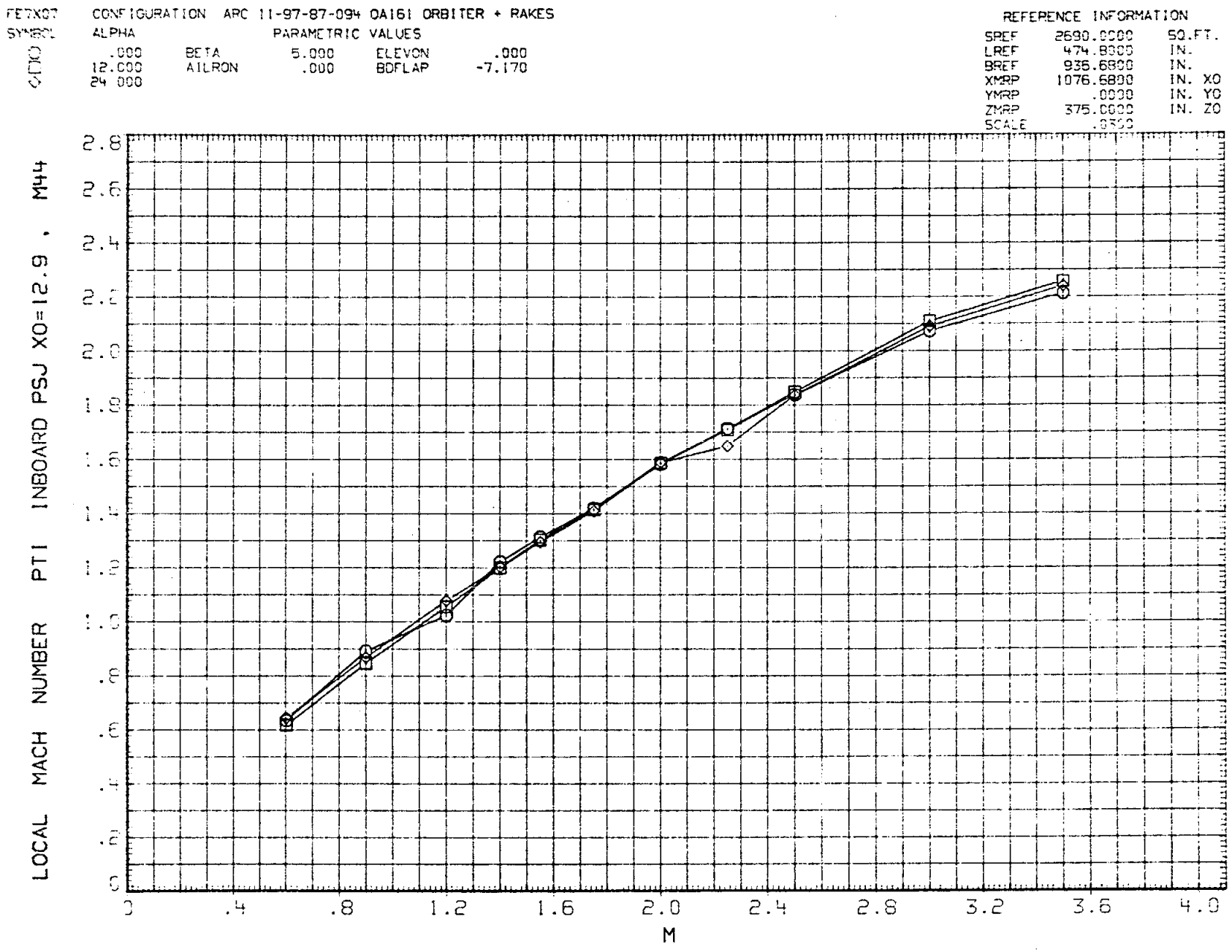


FIG. 14 EFFECT OF ALPHA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

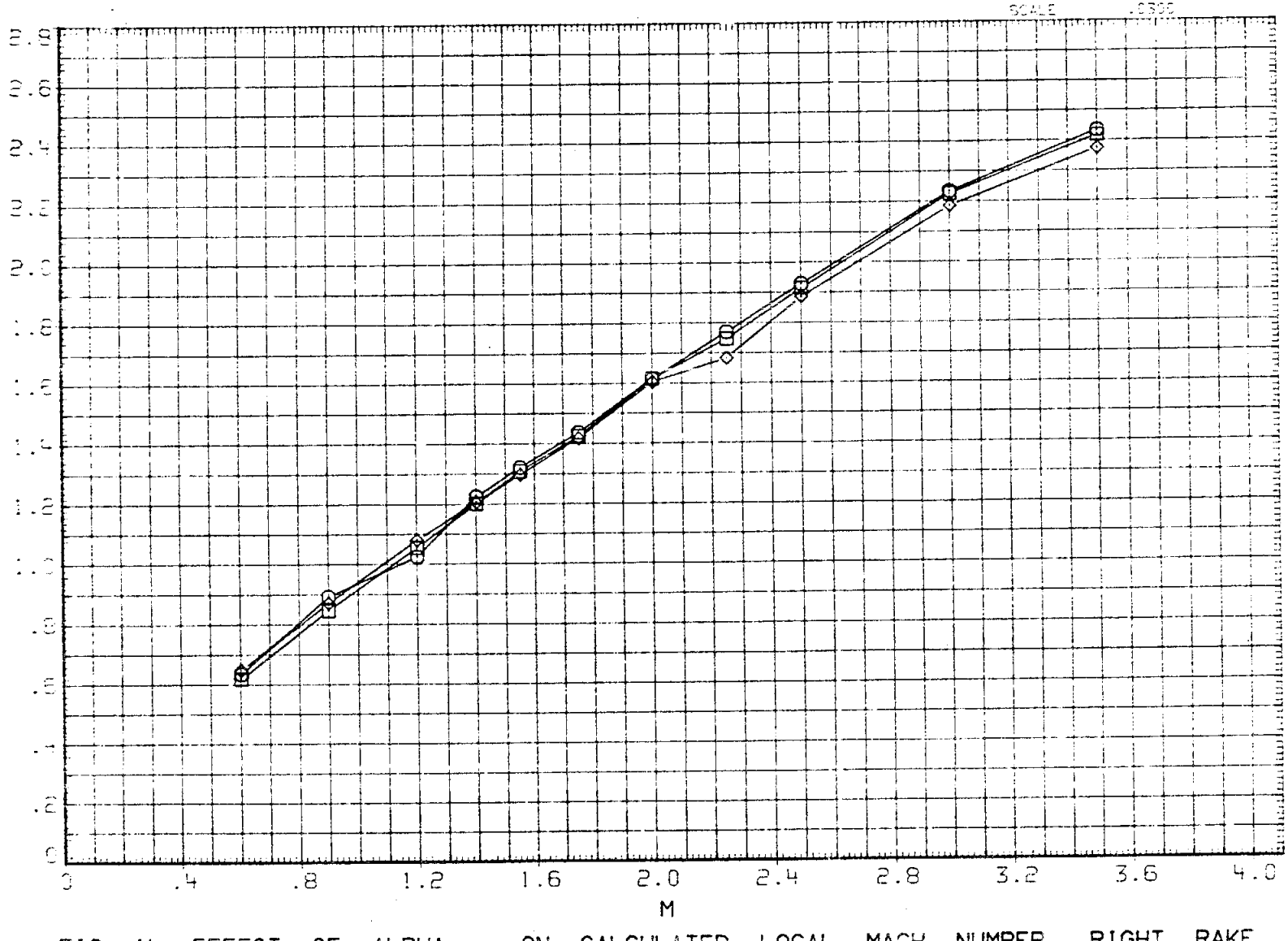


FIG. 14 EFFECT OF ALPHA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

FEDXOT CONFIGURATION ARC 11-97-87-094 OA161 ORBITER + RAKES

SYMBOL ALPHA PARAMETRIC VALUES

○	.000	BETA	5.000	ELEVON	.000
□	12.000	AILRON	.000	BDFLAP	-7.170
◇	24.000				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8800	IN.
BREF	936.6800	IN.
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ZMRP	375.0000	IN. ZO
SCALE	.0300	

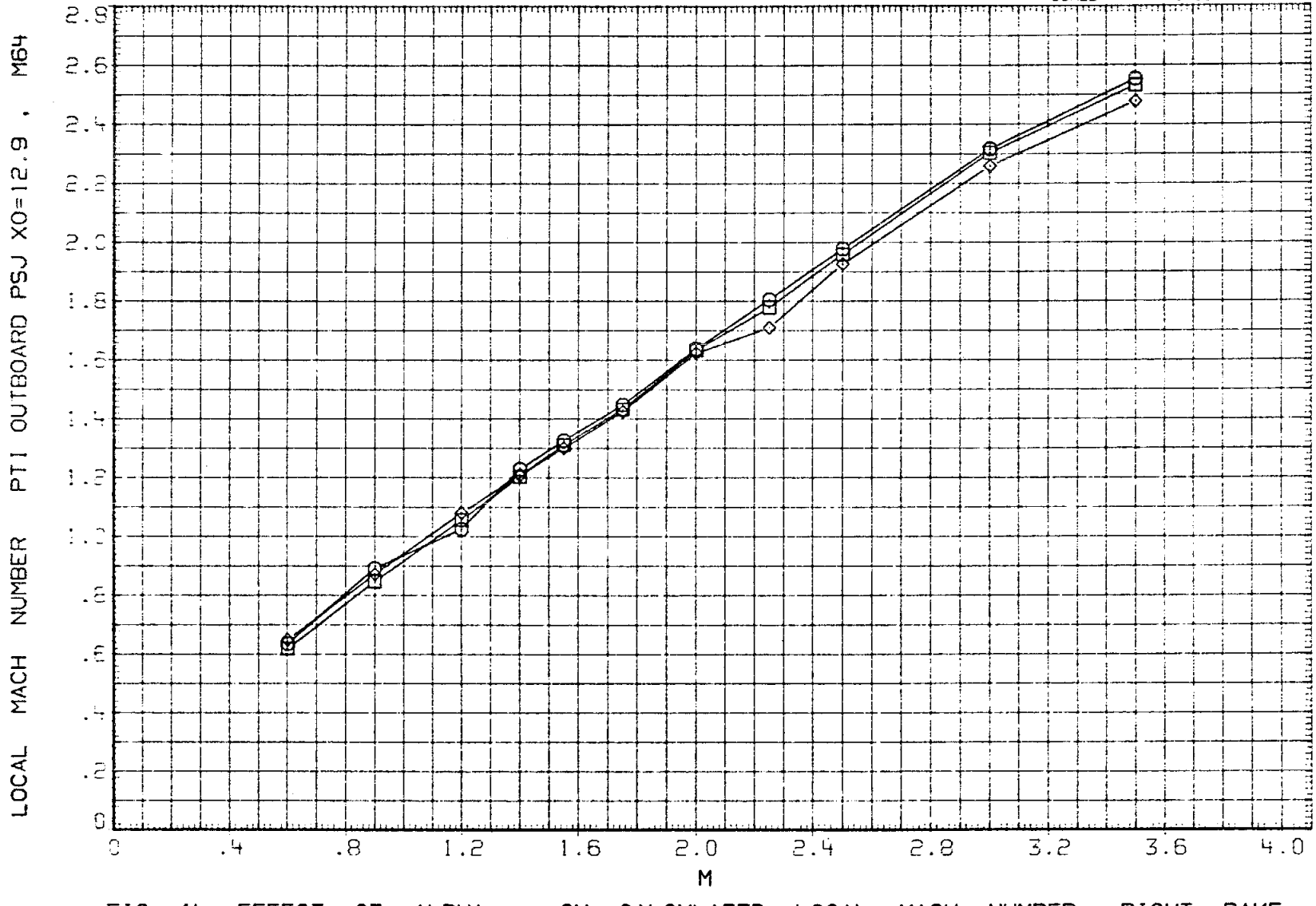


FIG. 14 EFFECT OF ALPHA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

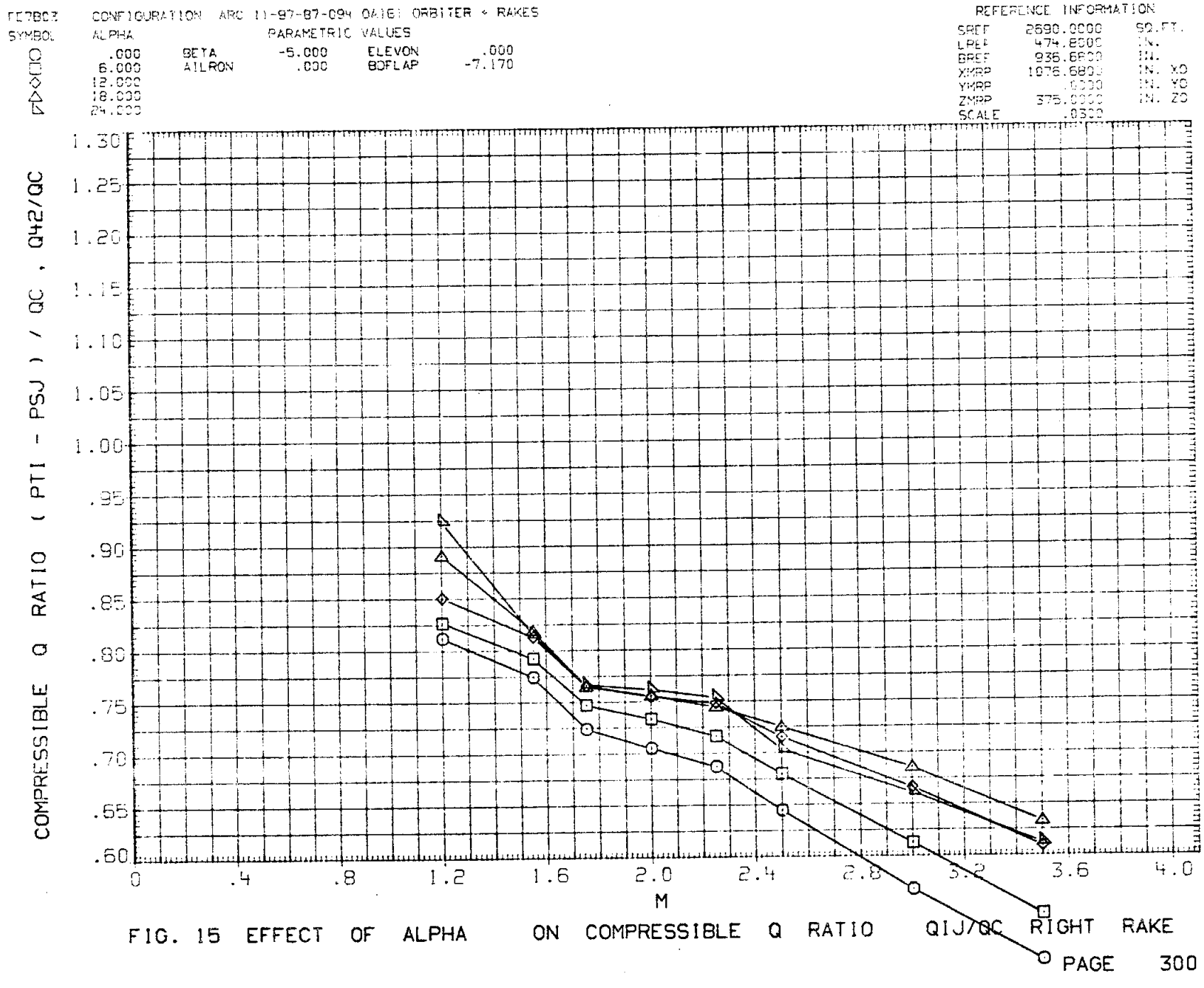


FIG. 15 EFFECT OF ALPHA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

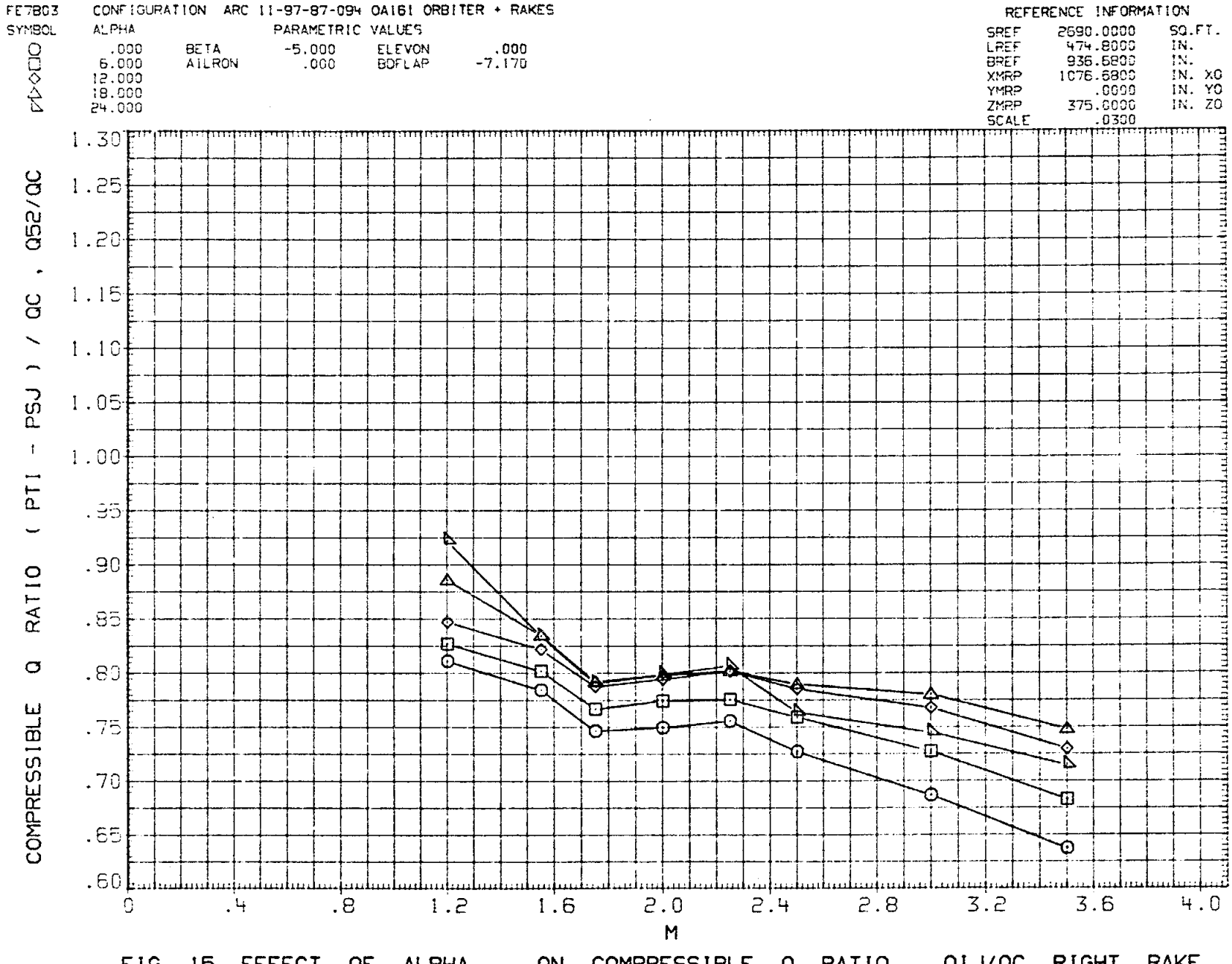


FIG. 15 EFFECT OF ALPHA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

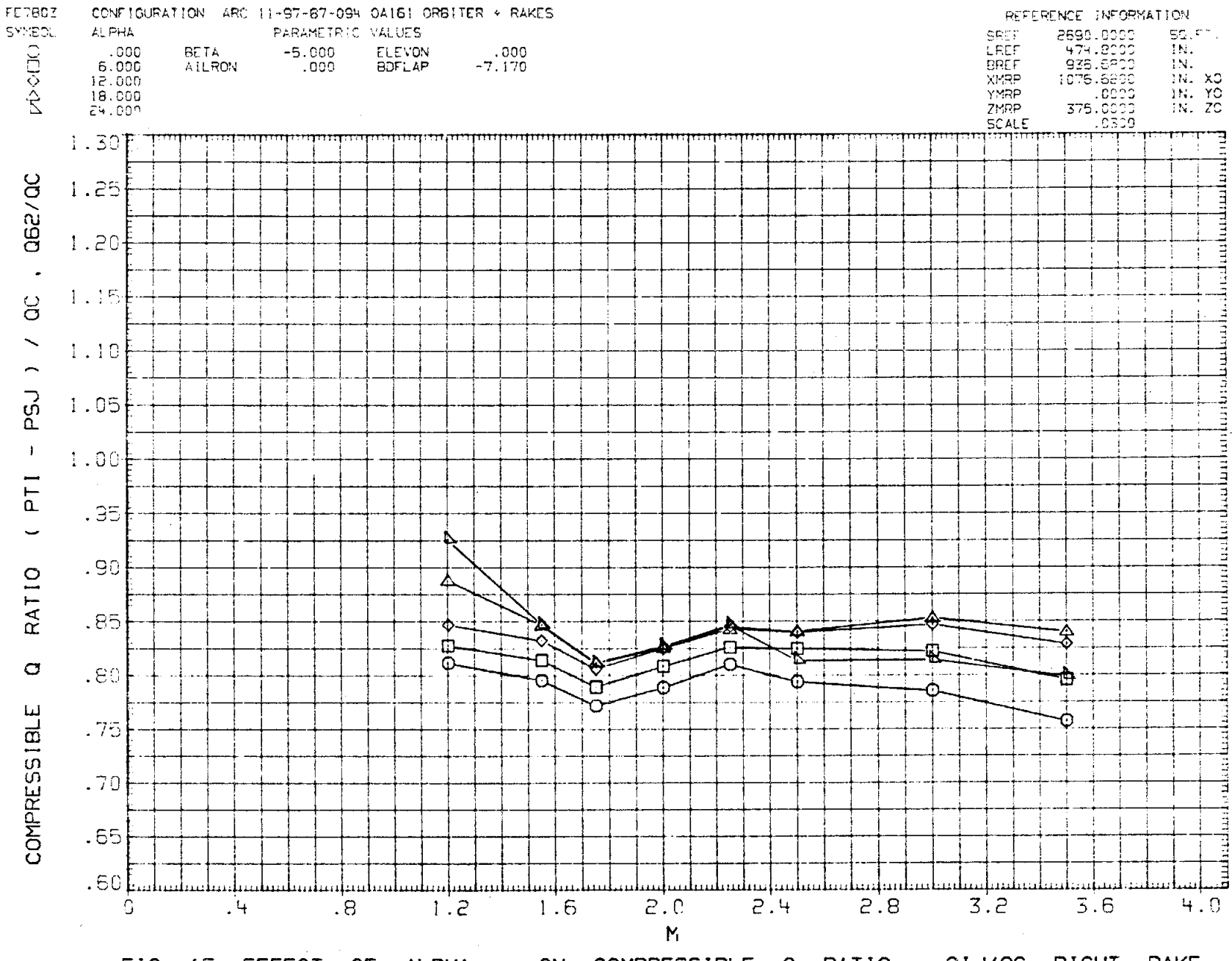


FIG. 15 EFFECT OF ALPHA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

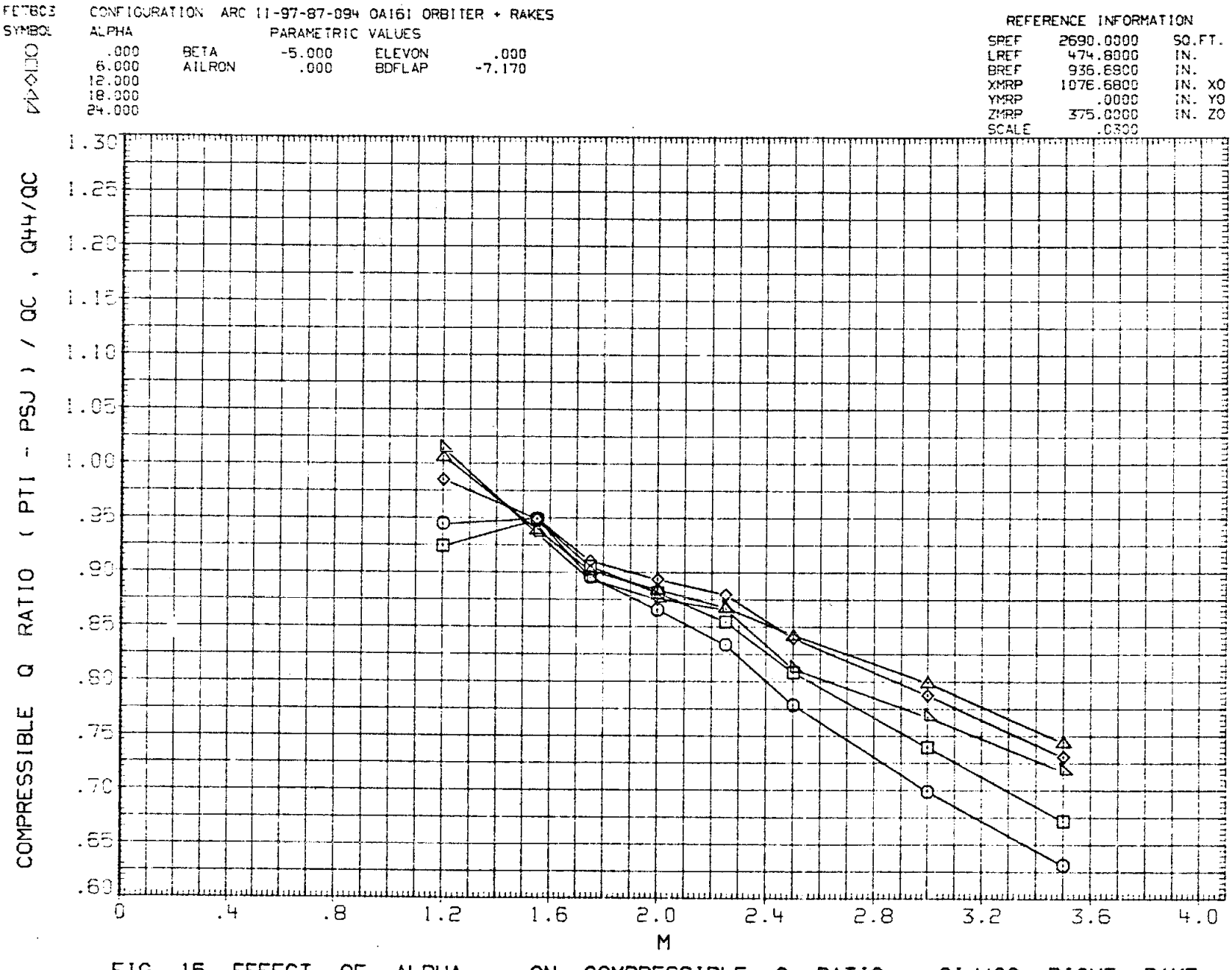


FIG. 15 EFFECT OF ALPHA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

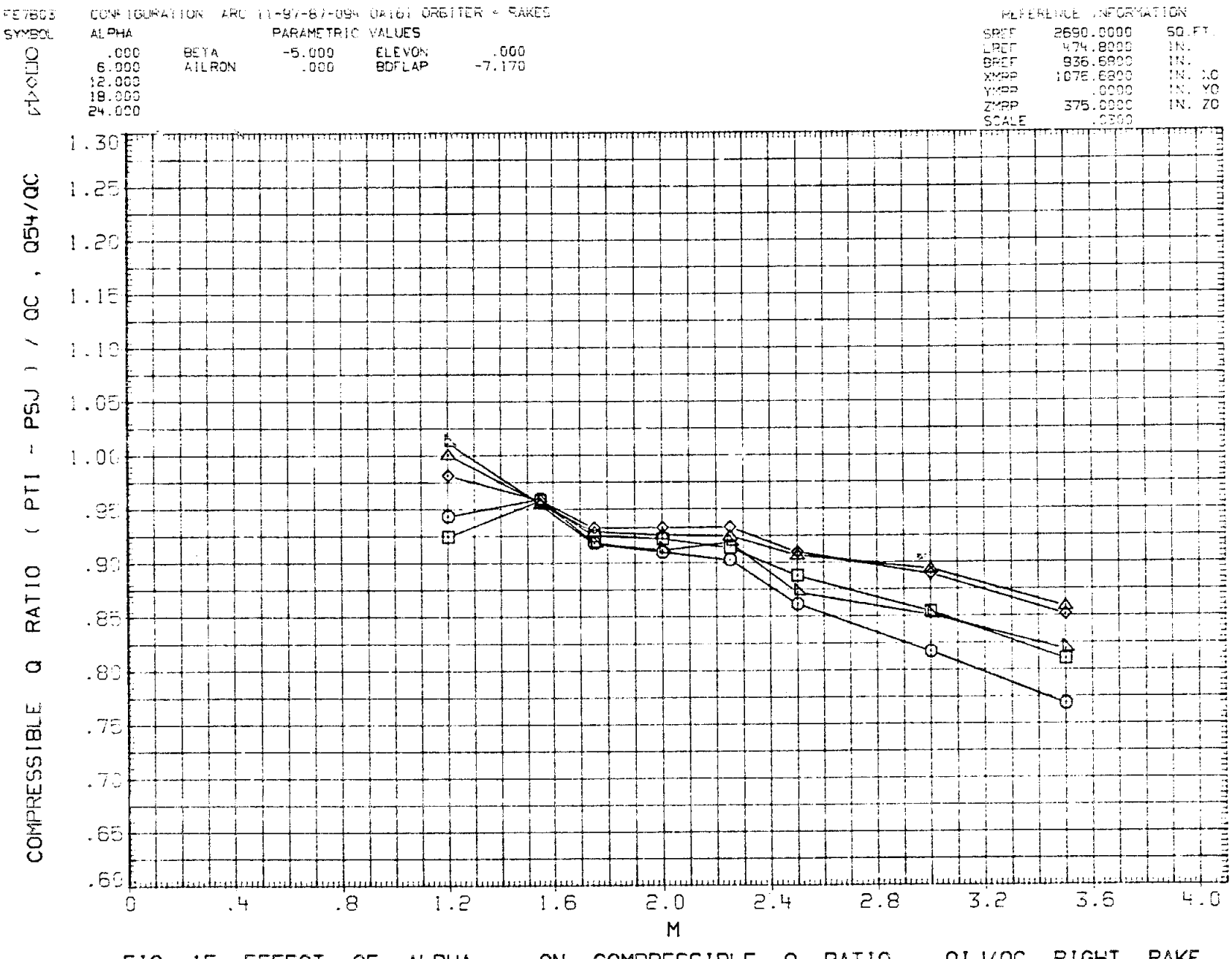


FIG. 15 EFFECT OF ALPHA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

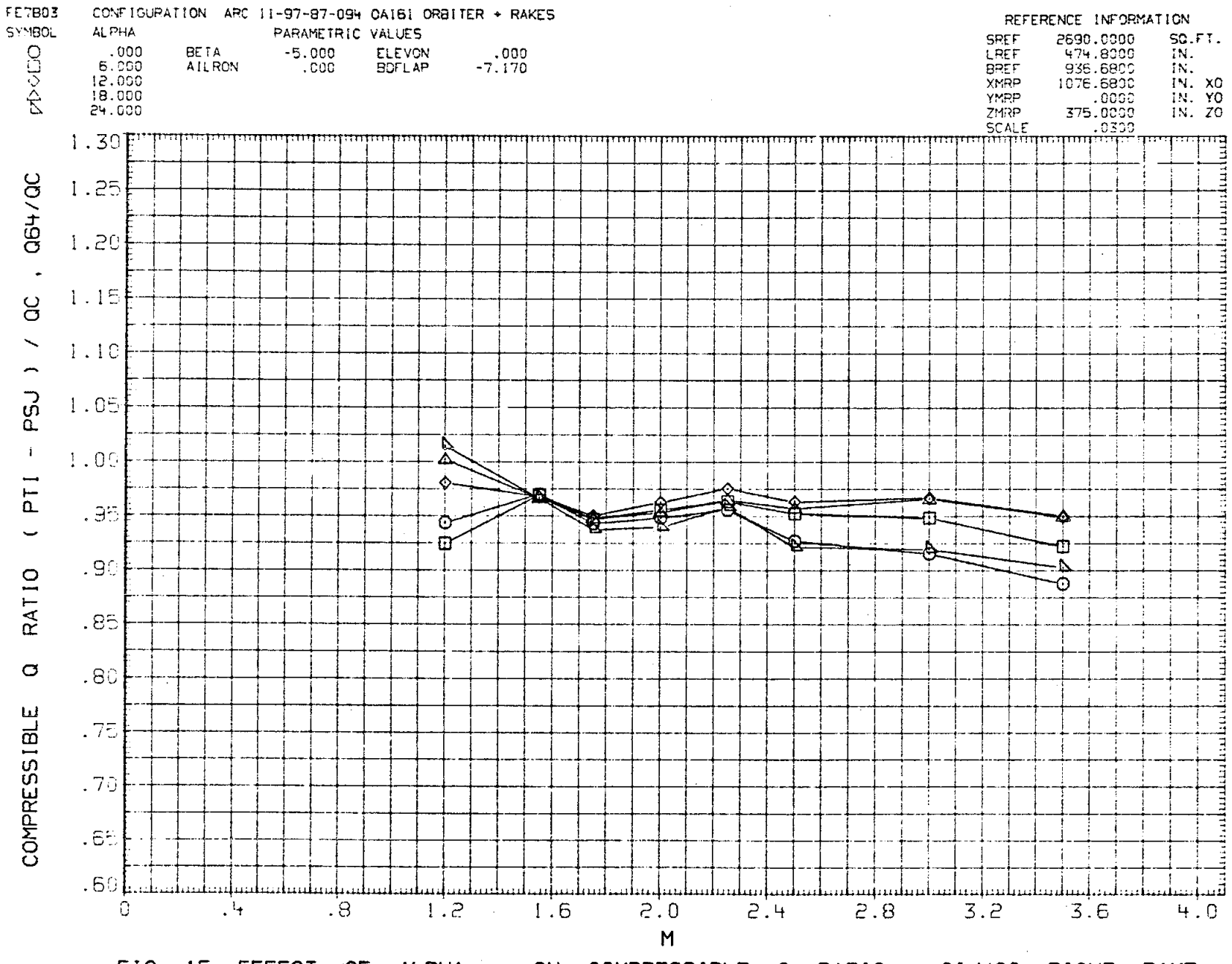


FIG. 15 EFFECT OF ALPHA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

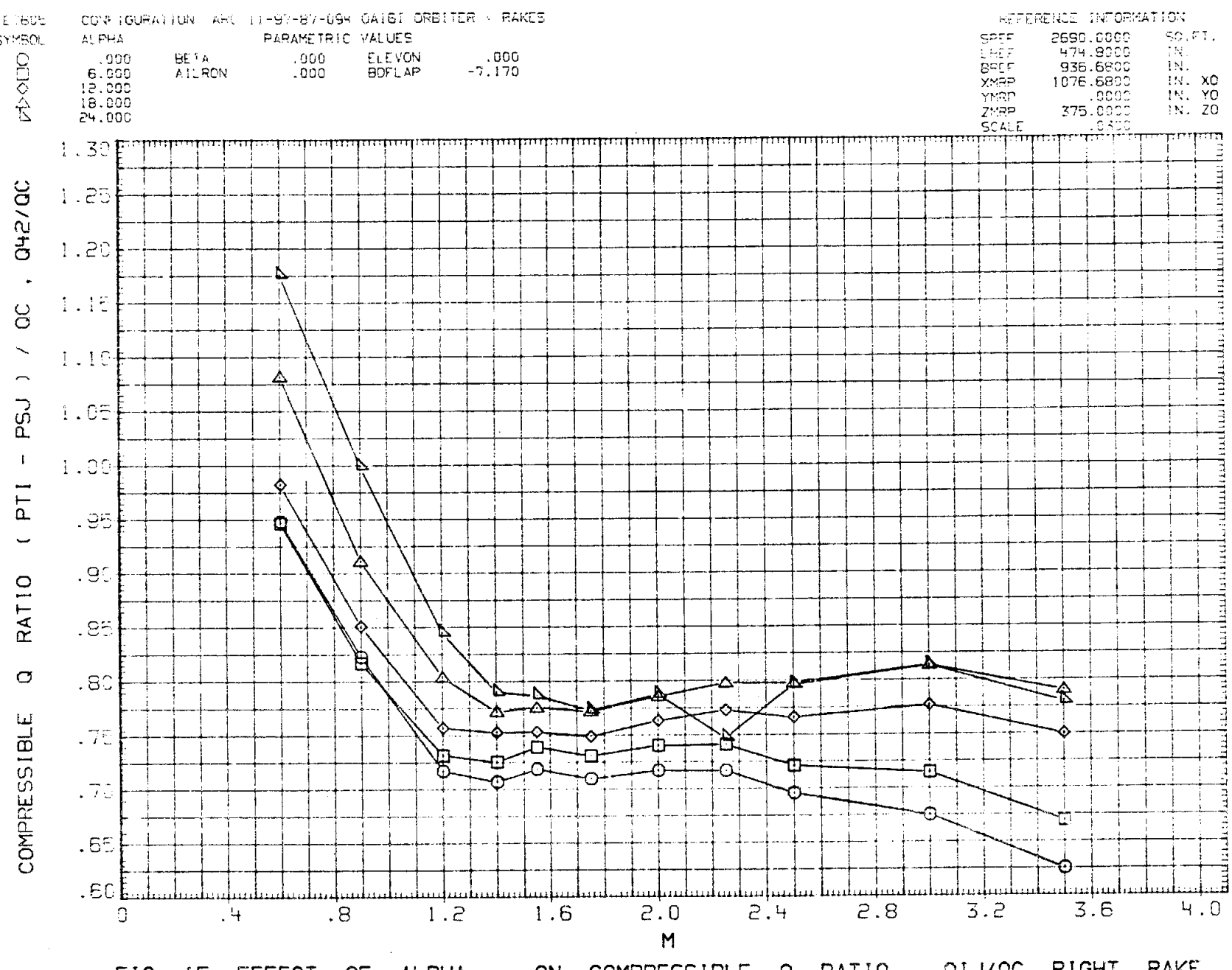


FIG. 15 EFFECT OF ALPHA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

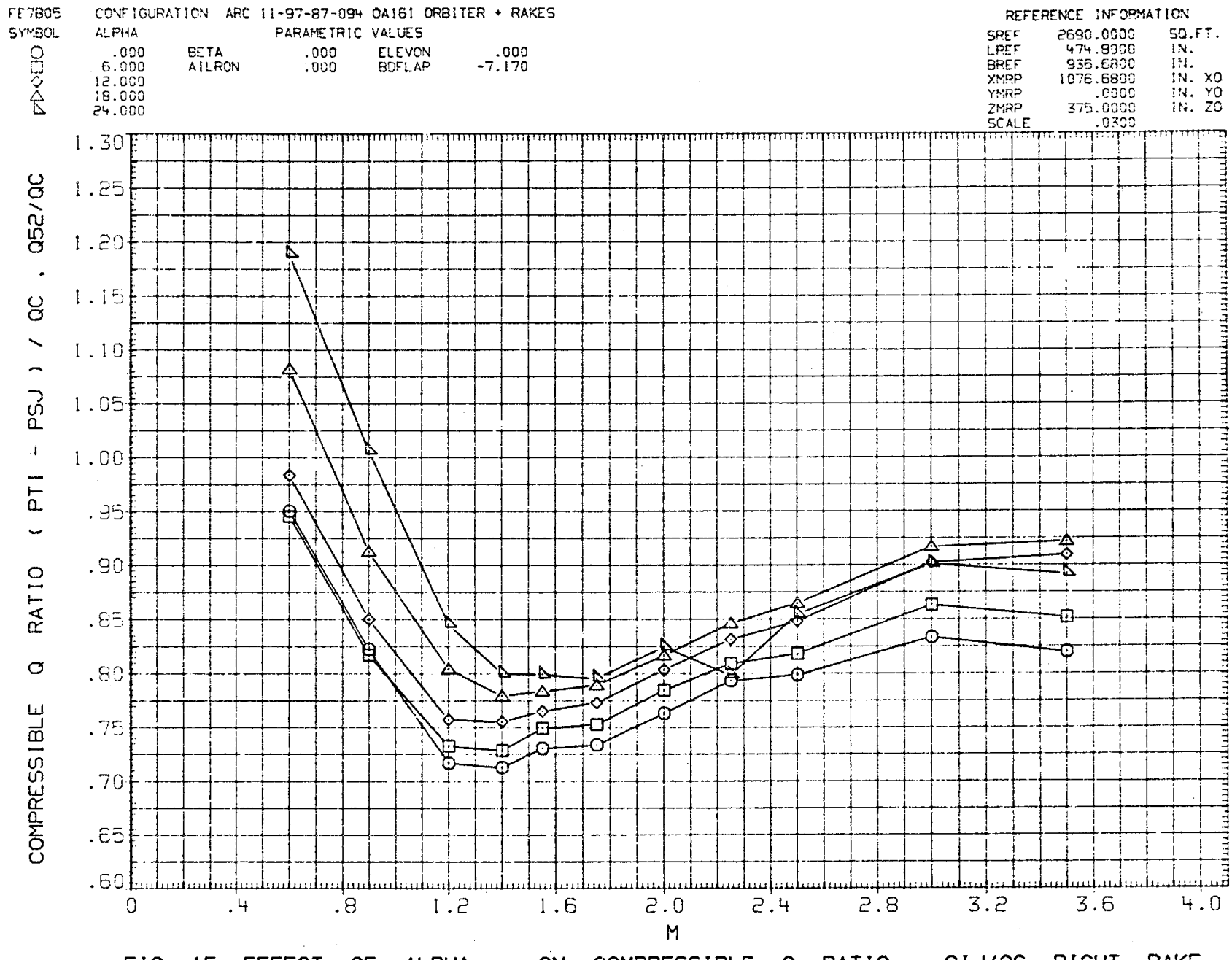


FIG. 15 EFFECT OF ALPHA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

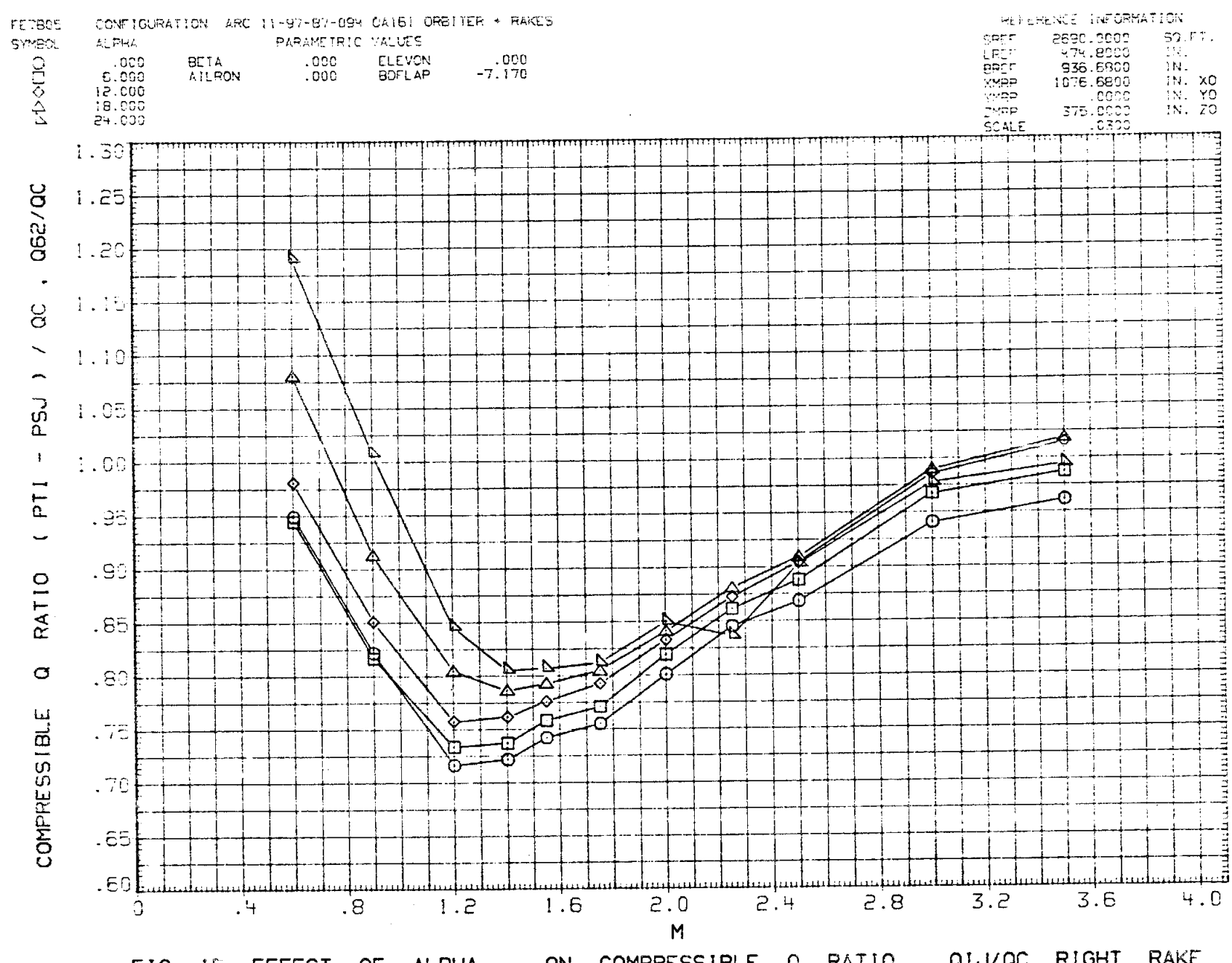


FIG. 15 EFFECT OF ALPHA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

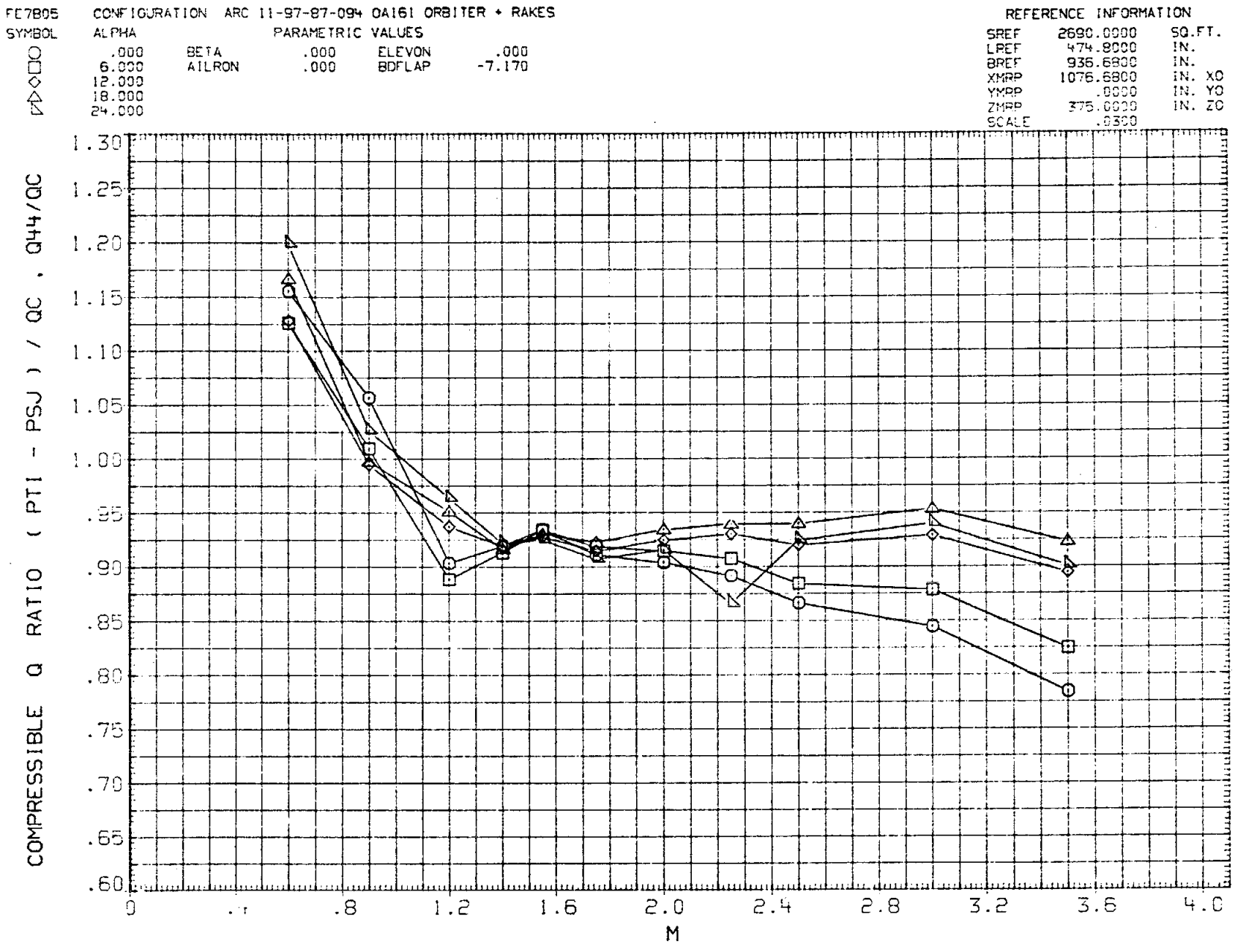


FIG. 15 EFFECT OF ALPHA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

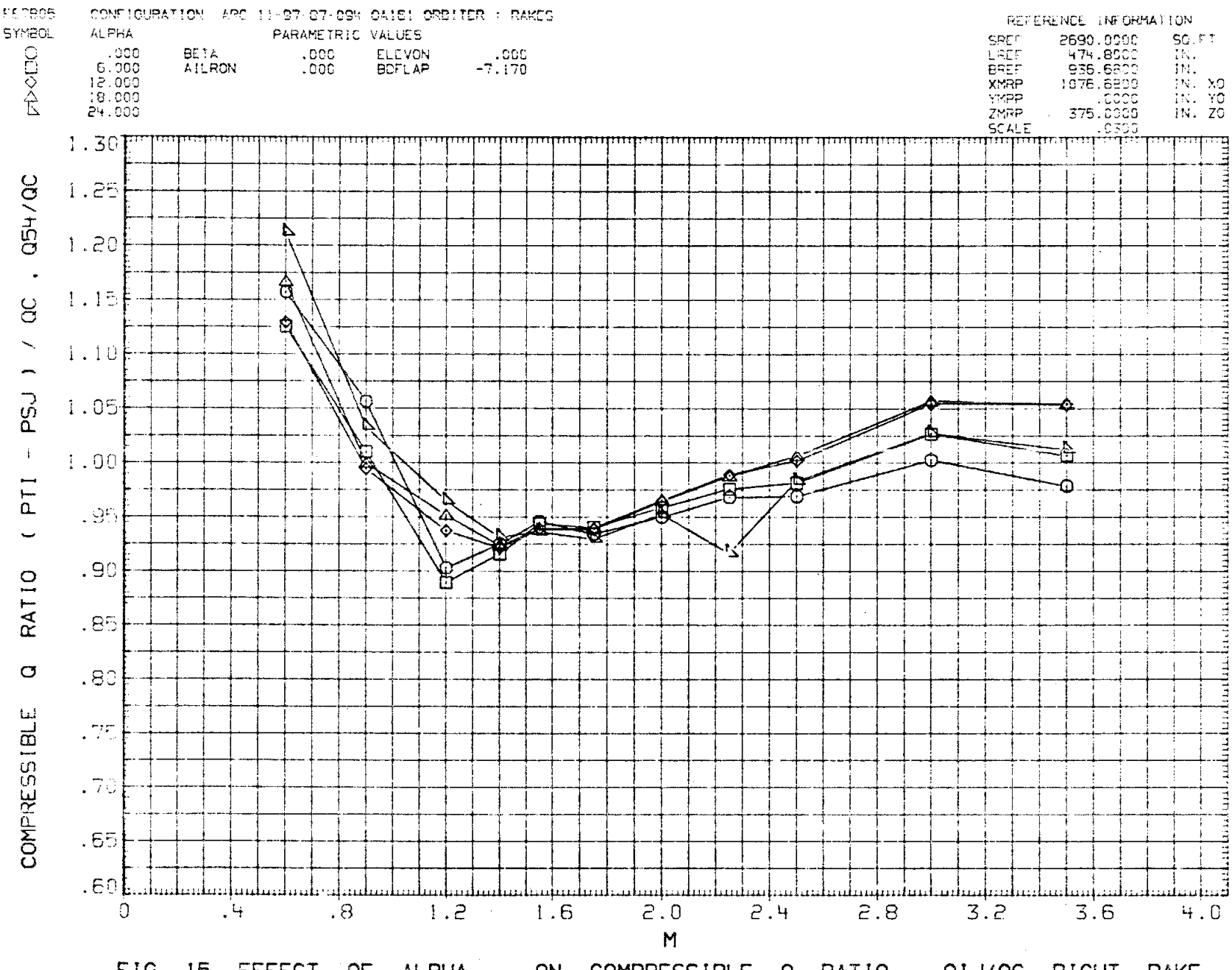


FIG. 15 EFFECT OF ALPHA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

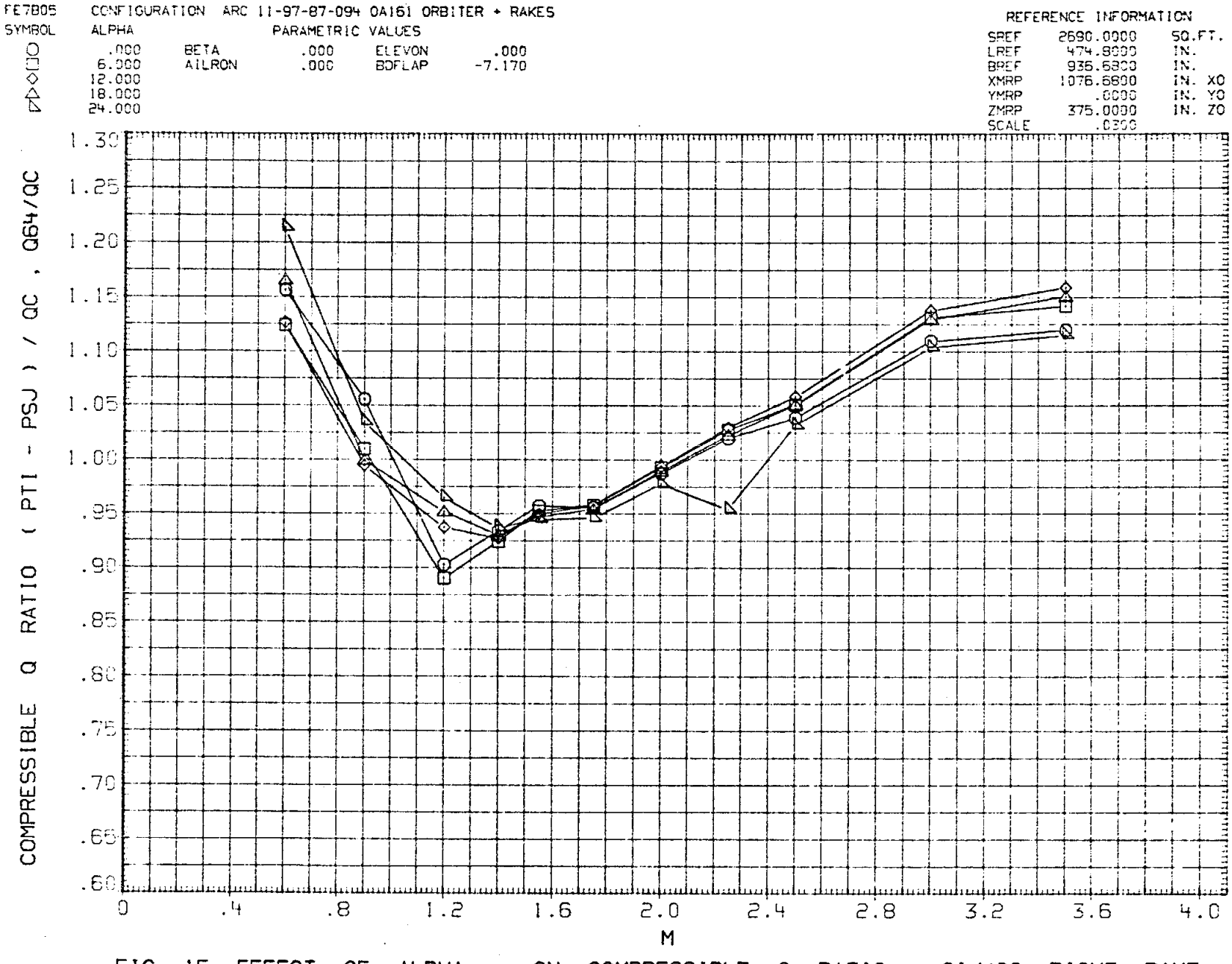


FIG. 15 EFFECT OF ALPHA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

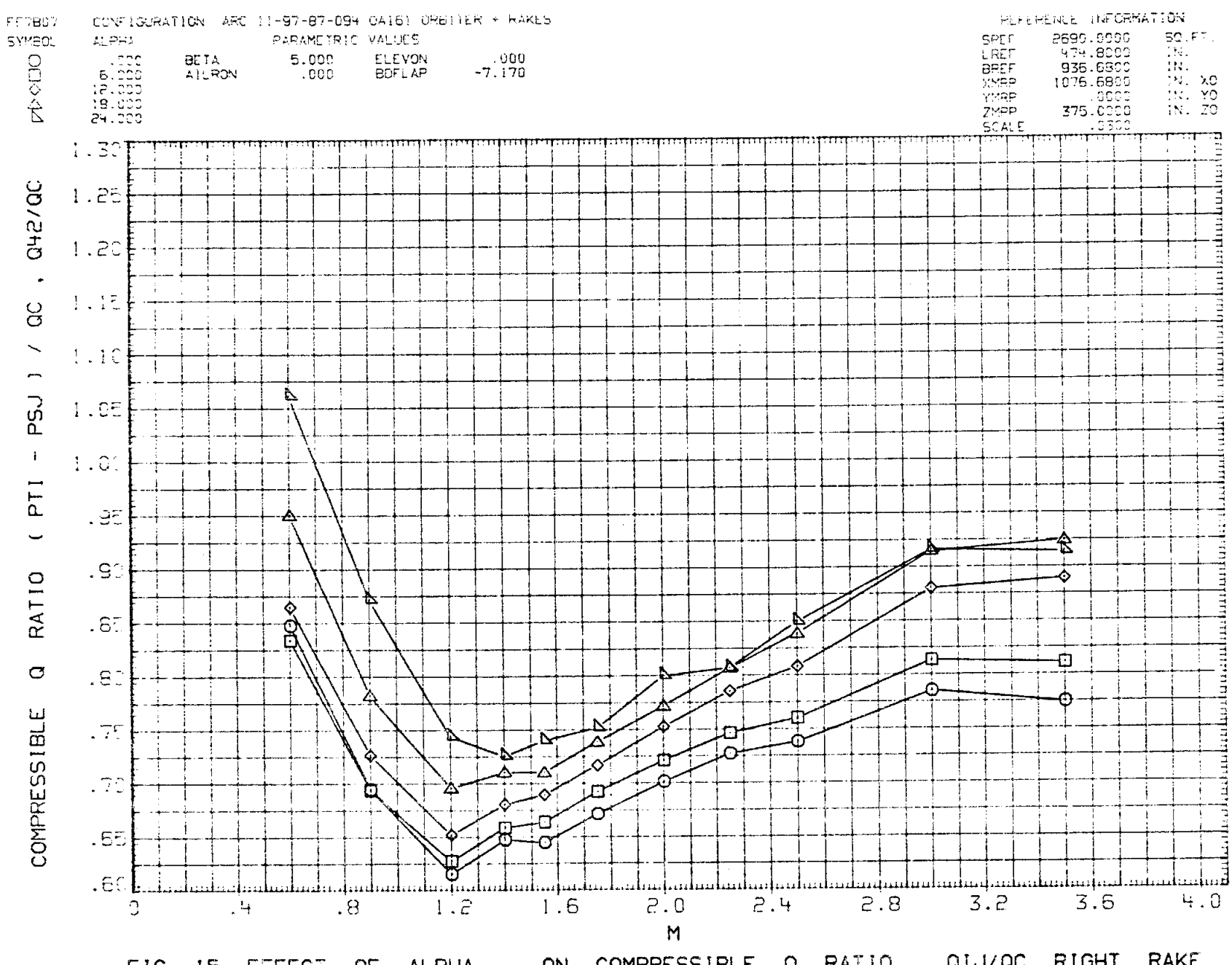


FIG. 15 EFFECT OF ALPHA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

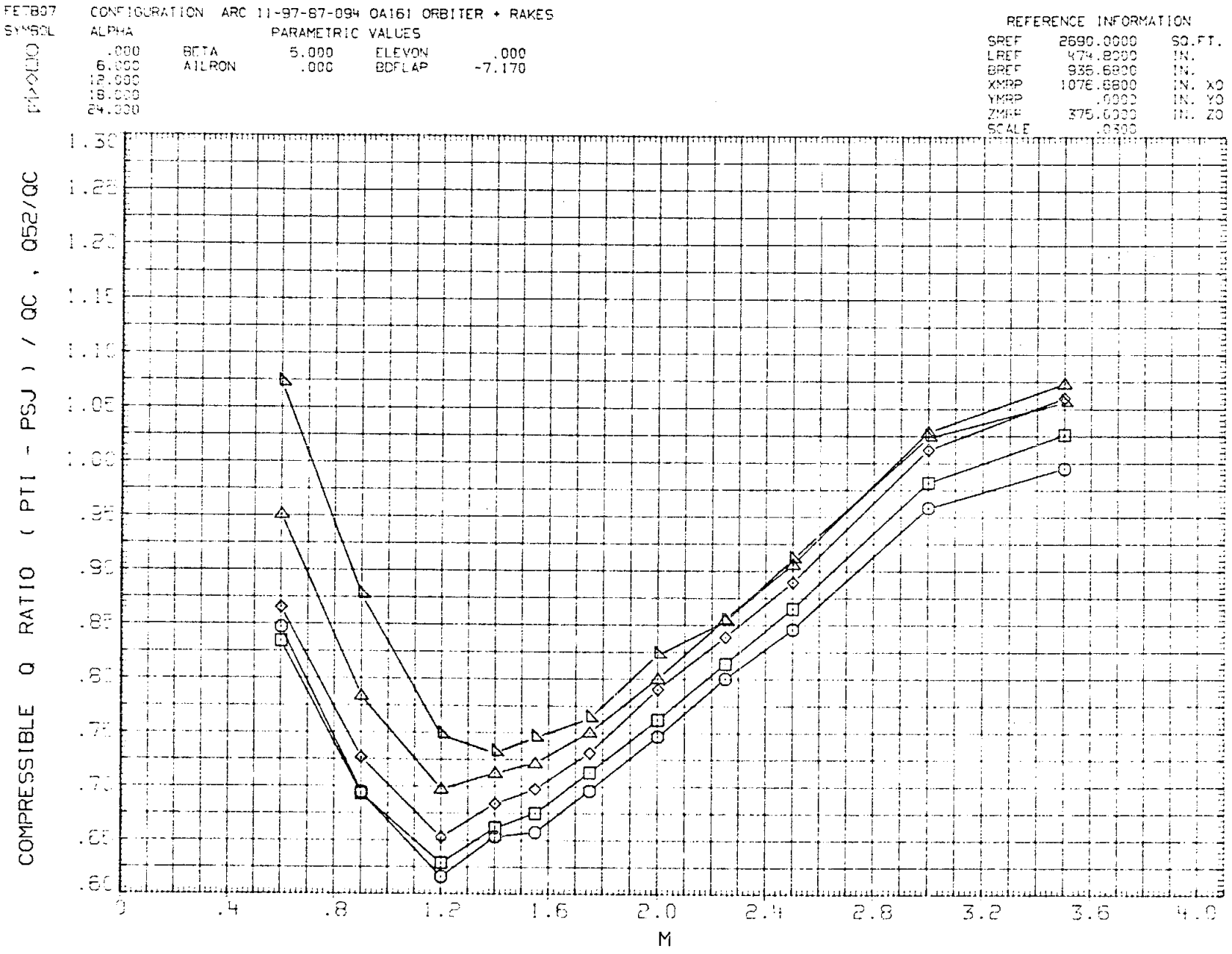


FIG. 15 EFFECT OF ALPHA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

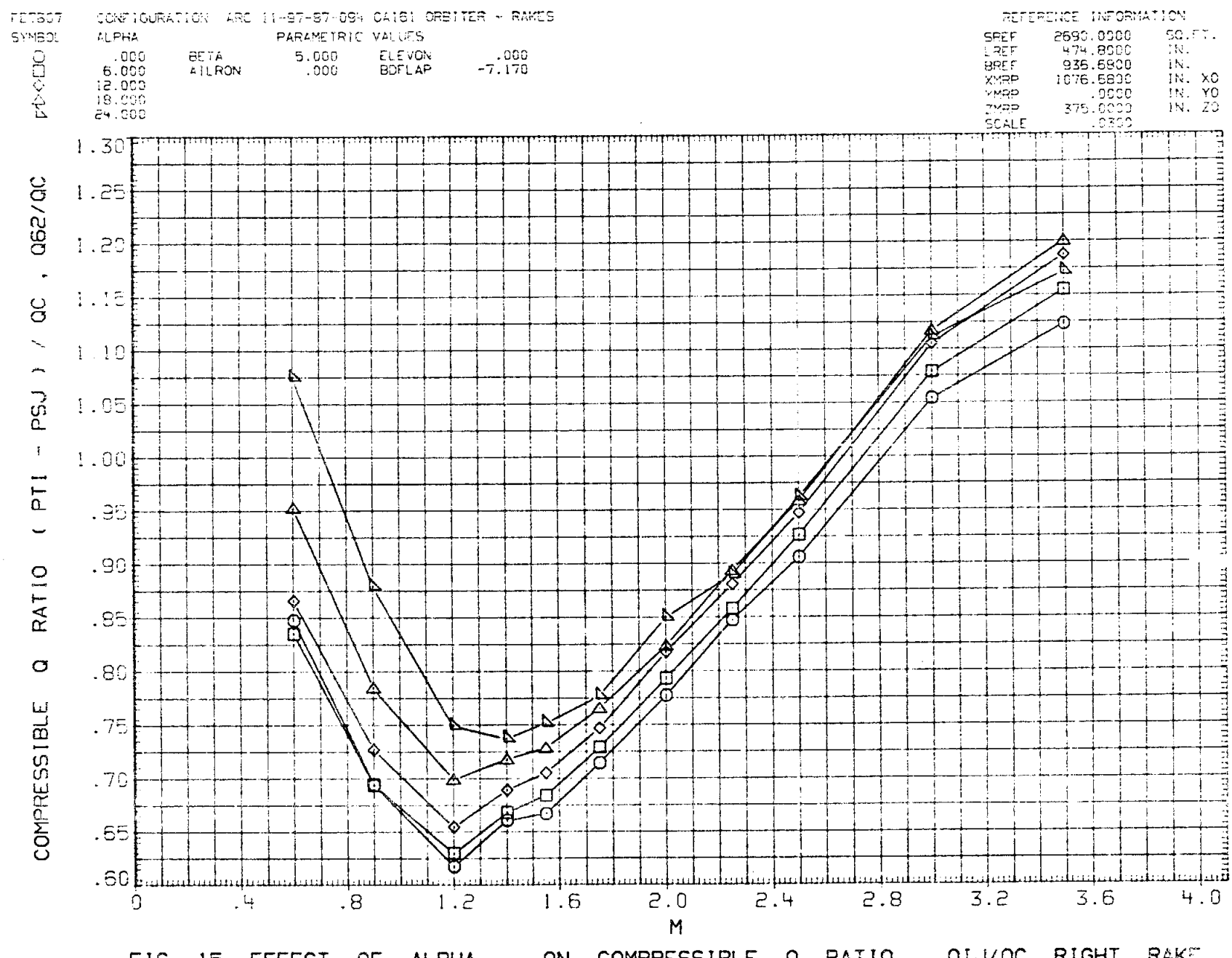


FIG. 15 EFFECT OF ALPHA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

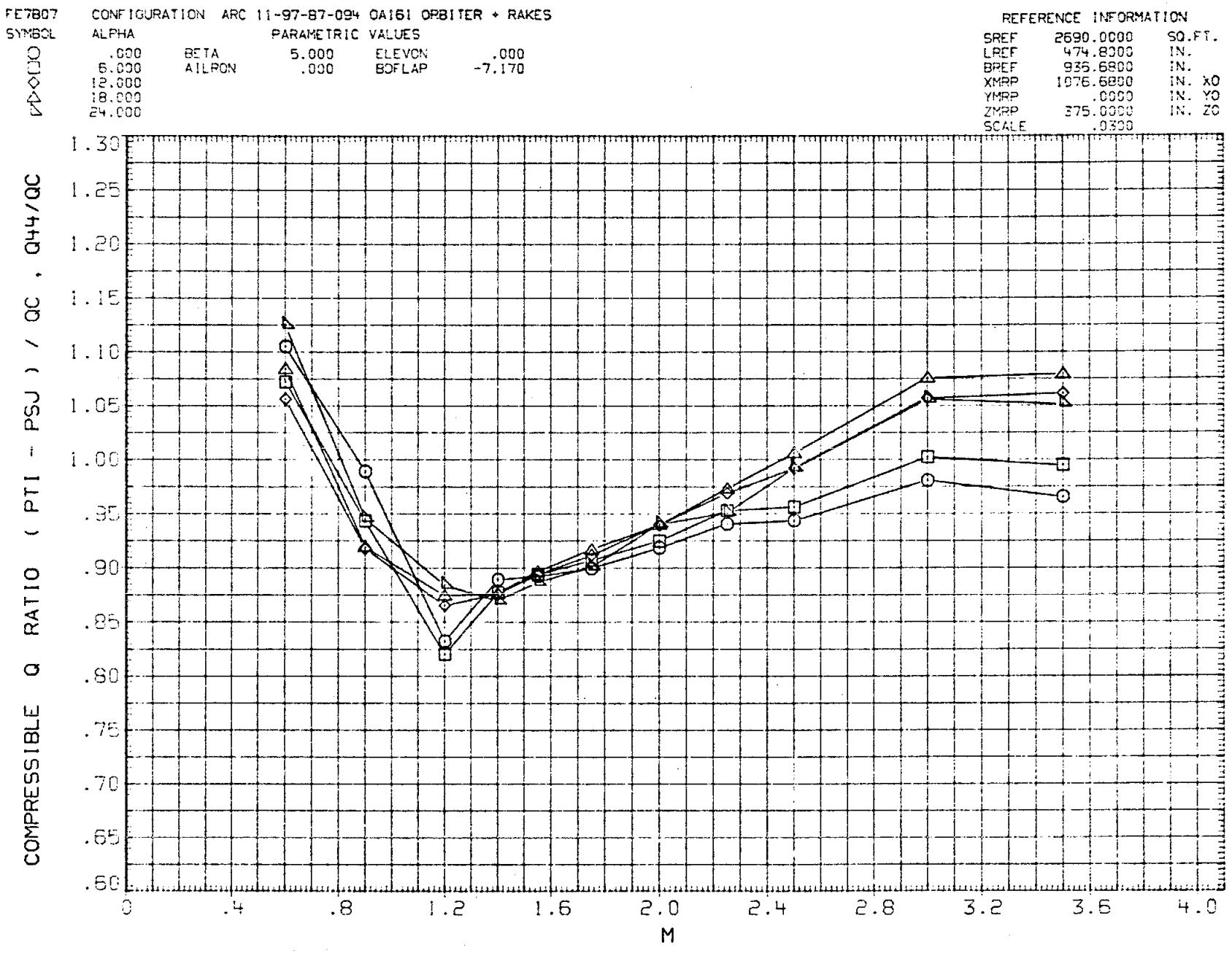


FIG. 15 EFFECT OF ALPHA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

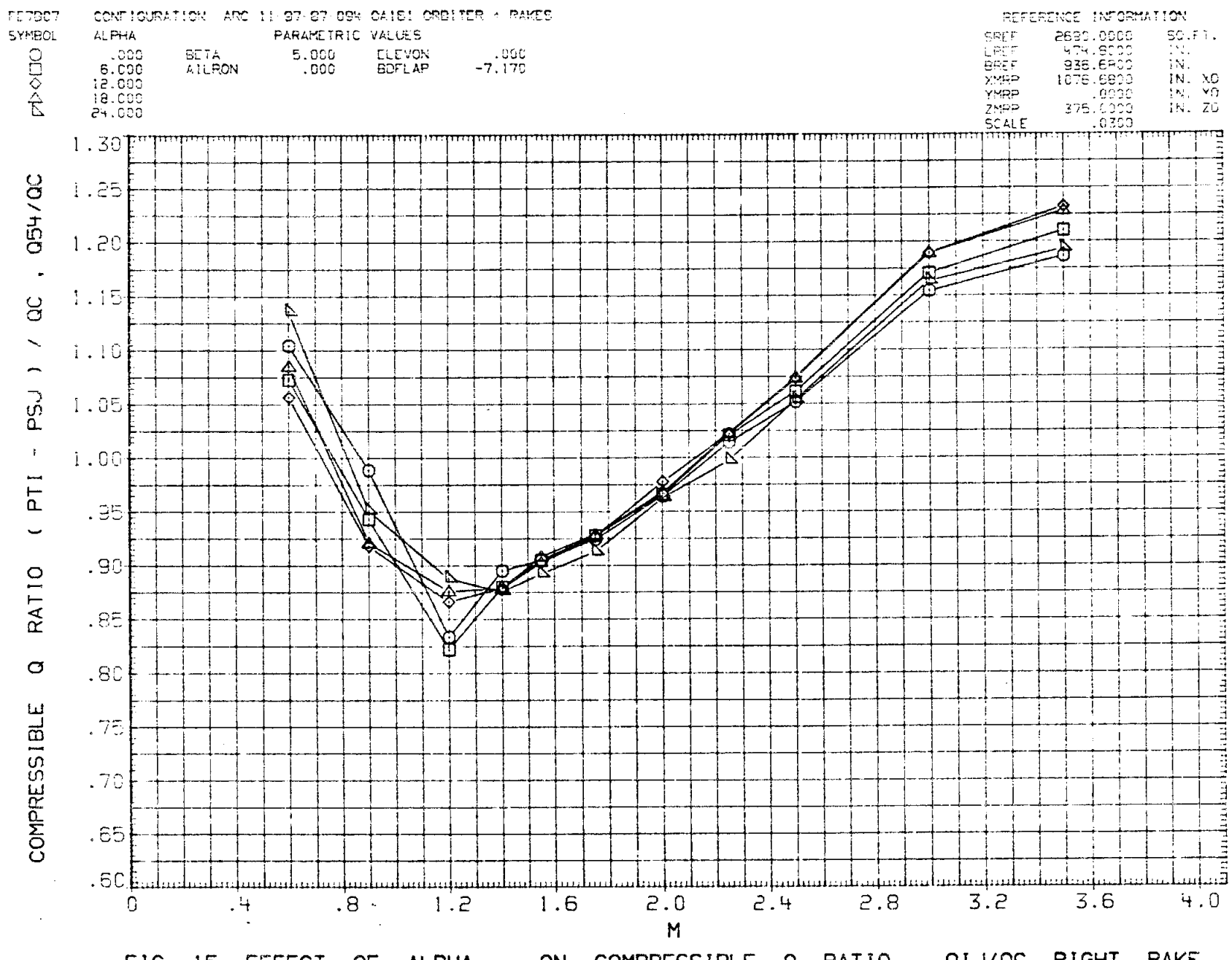


FIG. 15 EFFECT OF ALPHA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

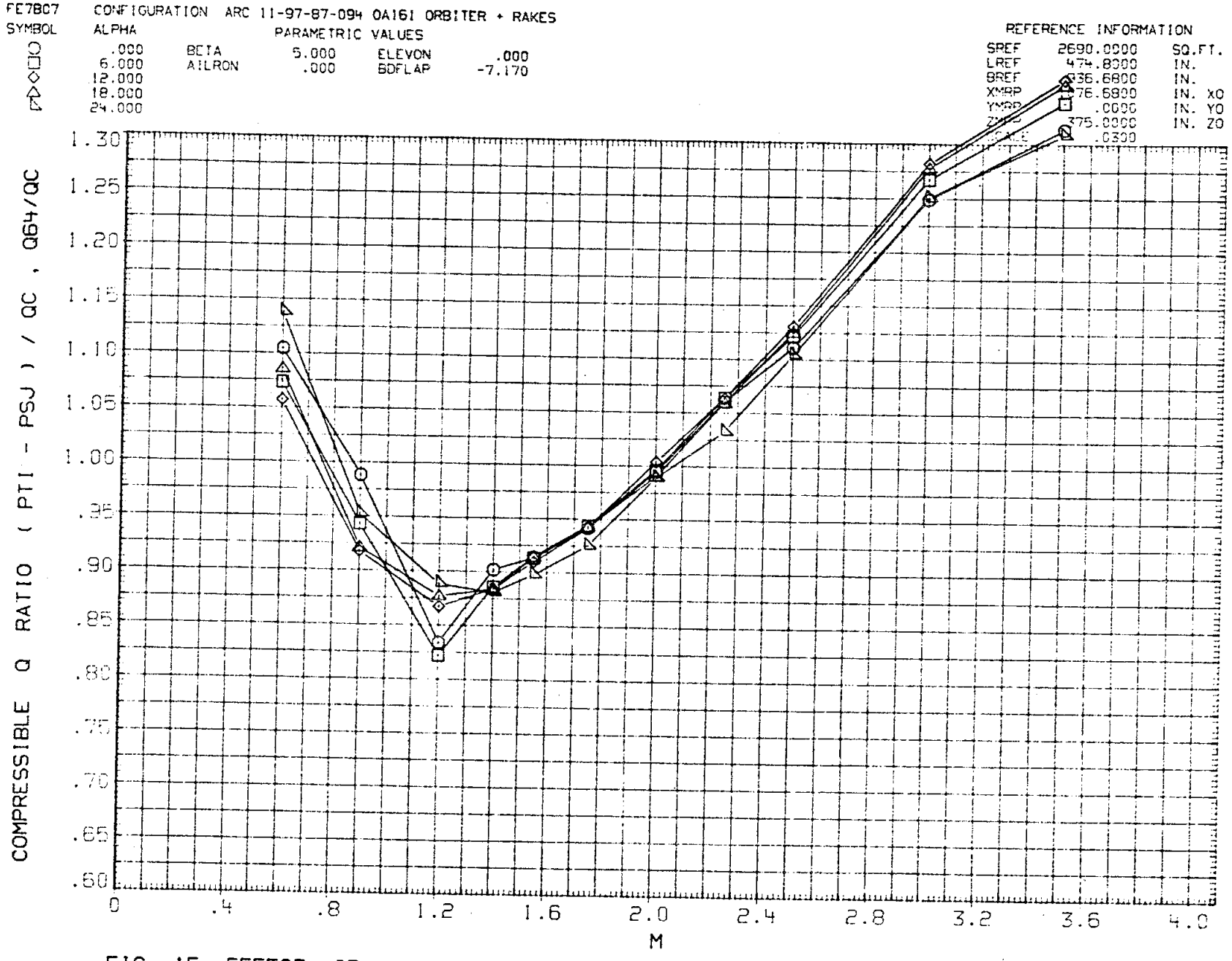


FIG. 15 EFFECT OF ALPHA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

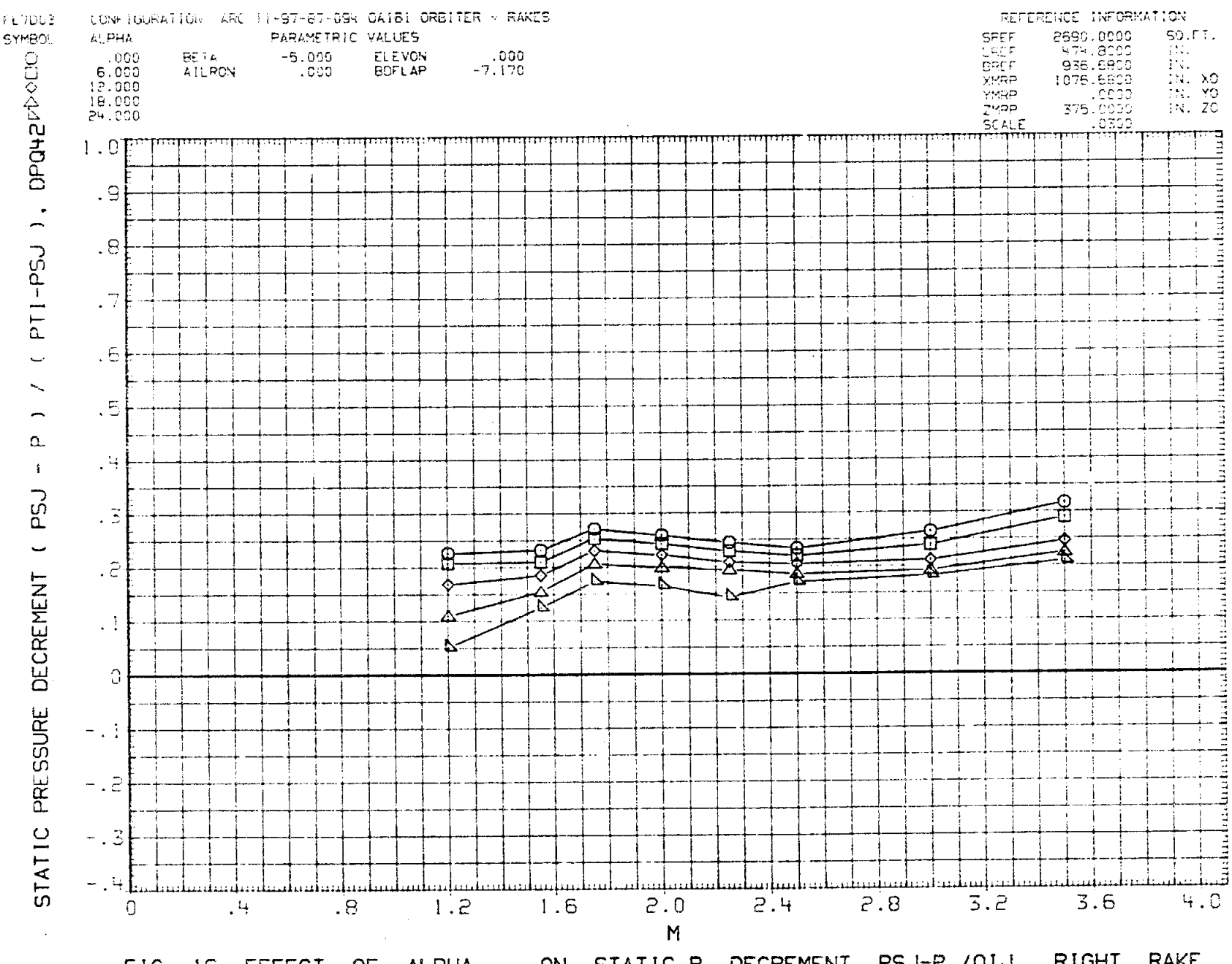


FIG. 16 EFFECT OF ALPHA ON STATIC P. DECREMENT PSJ-P /QIJ RIGHT RAKE

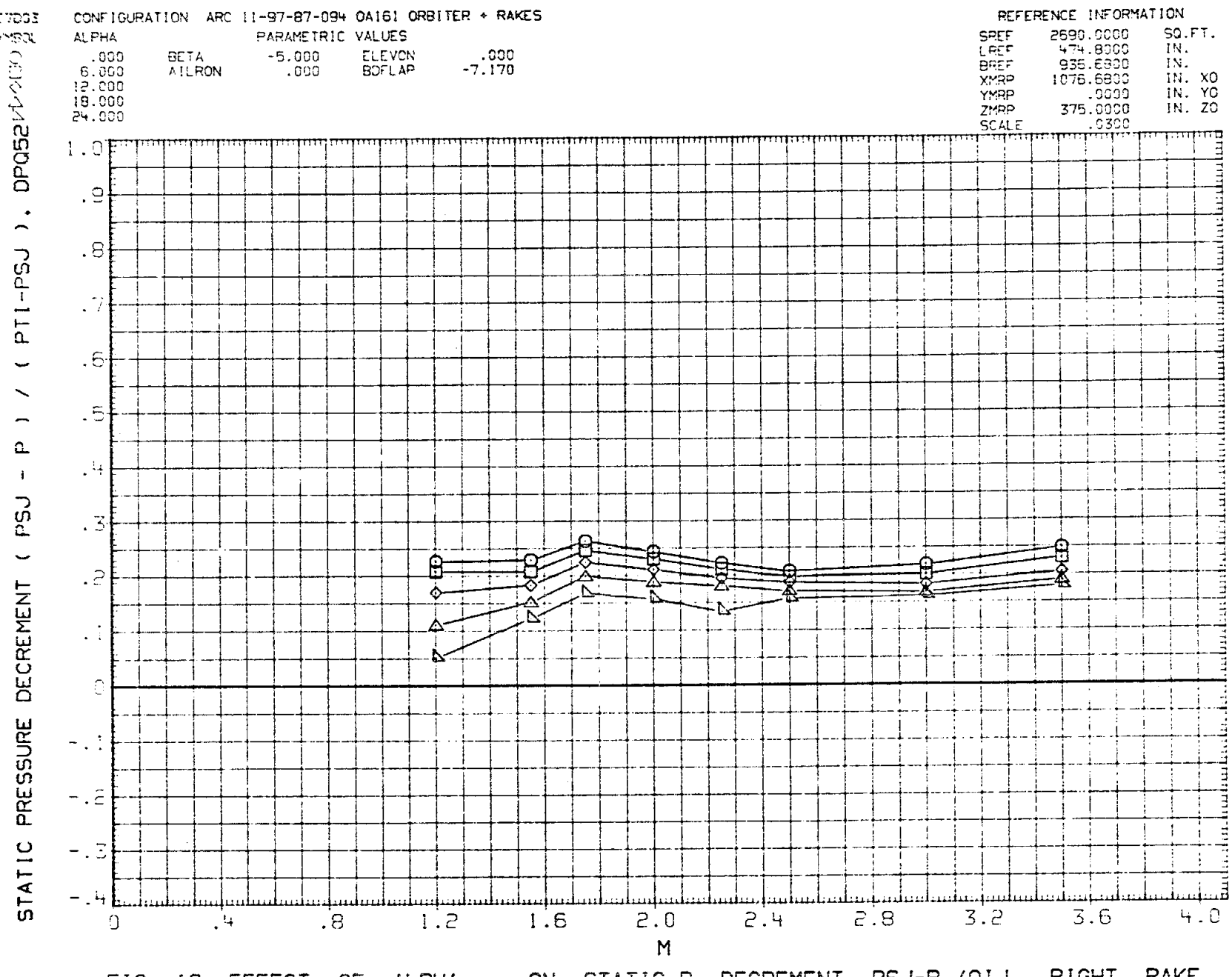


FIG. 16 EFFECT OF ALPHA ON STATIC P. DECREMENT PSJ-P /QIJ RIGHT RAKE

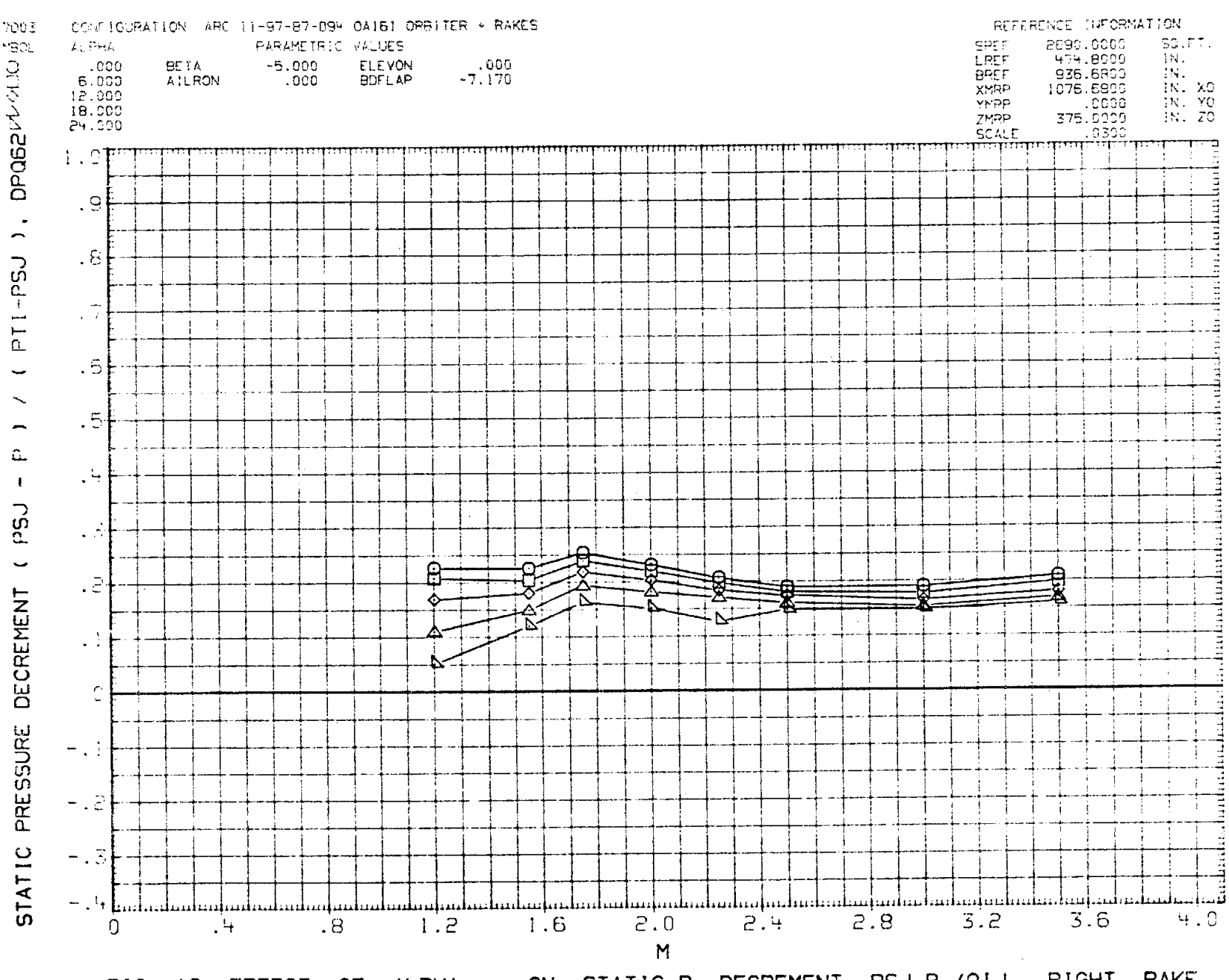


FIG. 16 EFFECT OF ALPHA ON STATIC P. DECREMENT PSJ-P /QIJ RIGHT RAKE

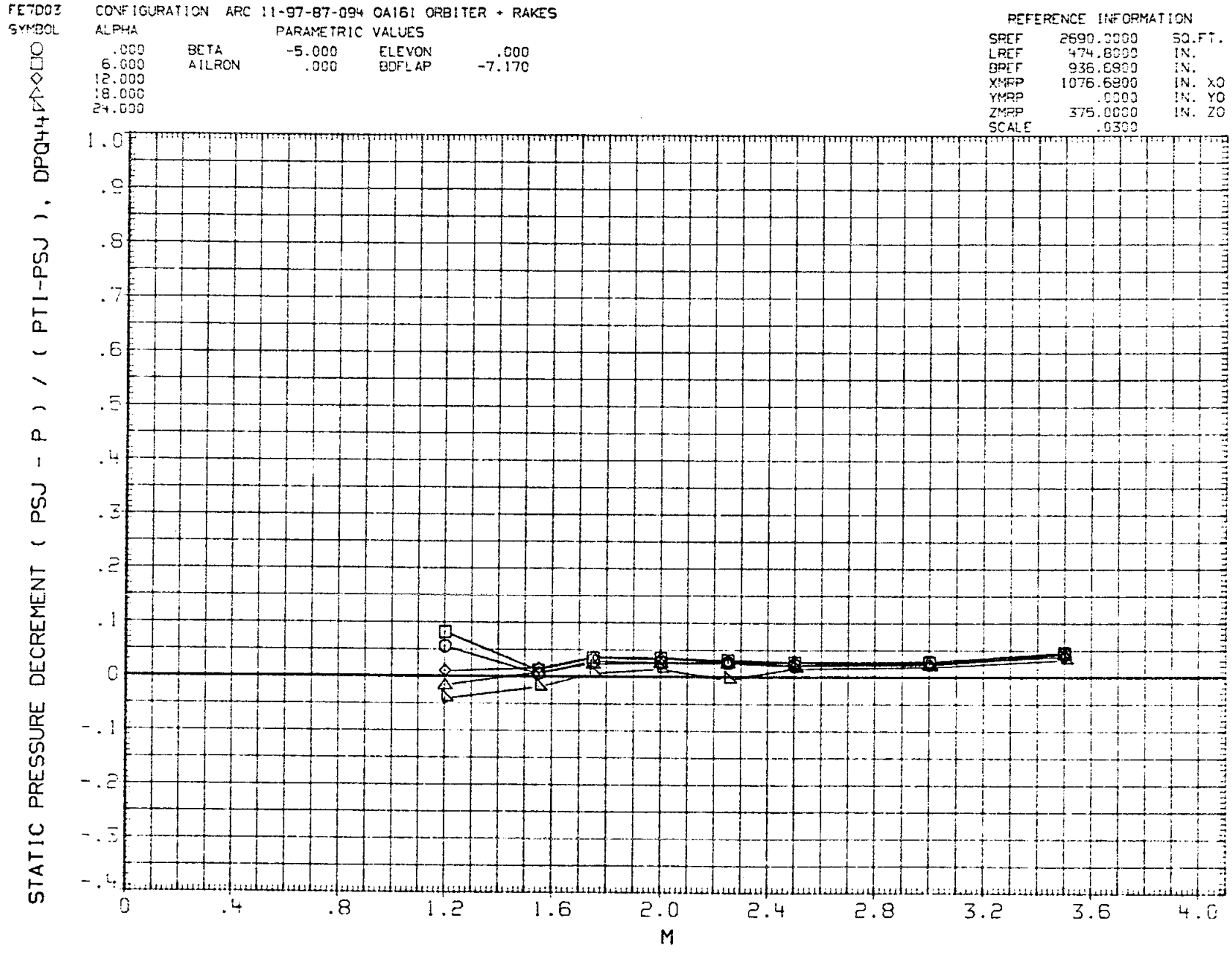


FIG. 16 EFFECT OF ALPHA ON STATIC P. DECREMENT PSJ-P /QIJ RIGHT RAKE

FE7003 CONFIGURATION ARC 11-97-87-094 OA161 ORBITER + RAKES

SYMBOL	ALPHA	PARAMETRIC VALUES			
	.000	BETA	-5.000	ELEVON	.000
	6.000	AILRON	.000	BDFLAP	-7.170
	12.000				
	18.000				
	24.000				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.6000	IN.
BREF	935.0800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	370.0000	IN. ZO
SCALE	.0000	

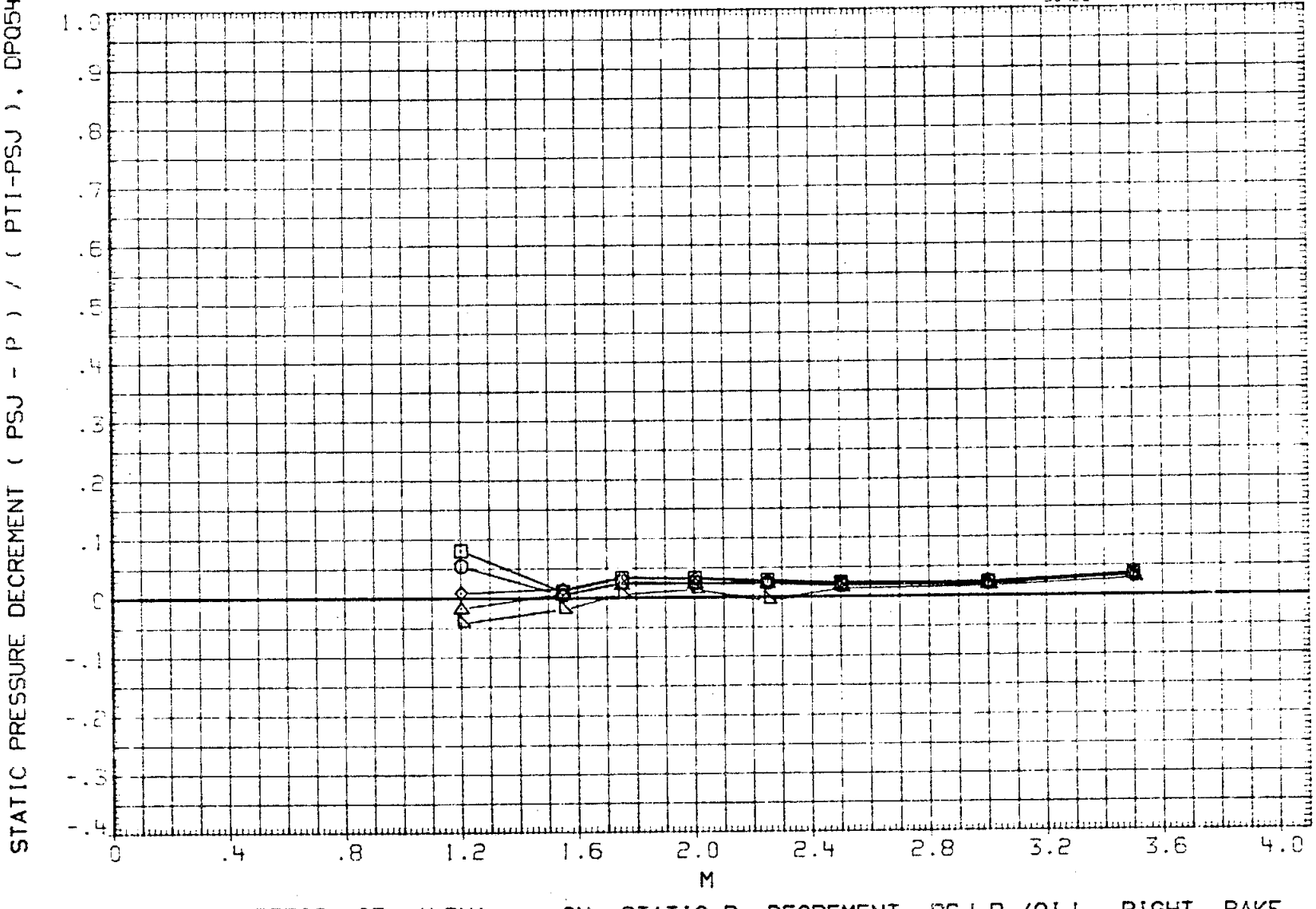


FIG. 16 EFFECT OF ALPHA ON STATIC P. DECREMENT PSJ-P /QIJ RIGHT RAKE

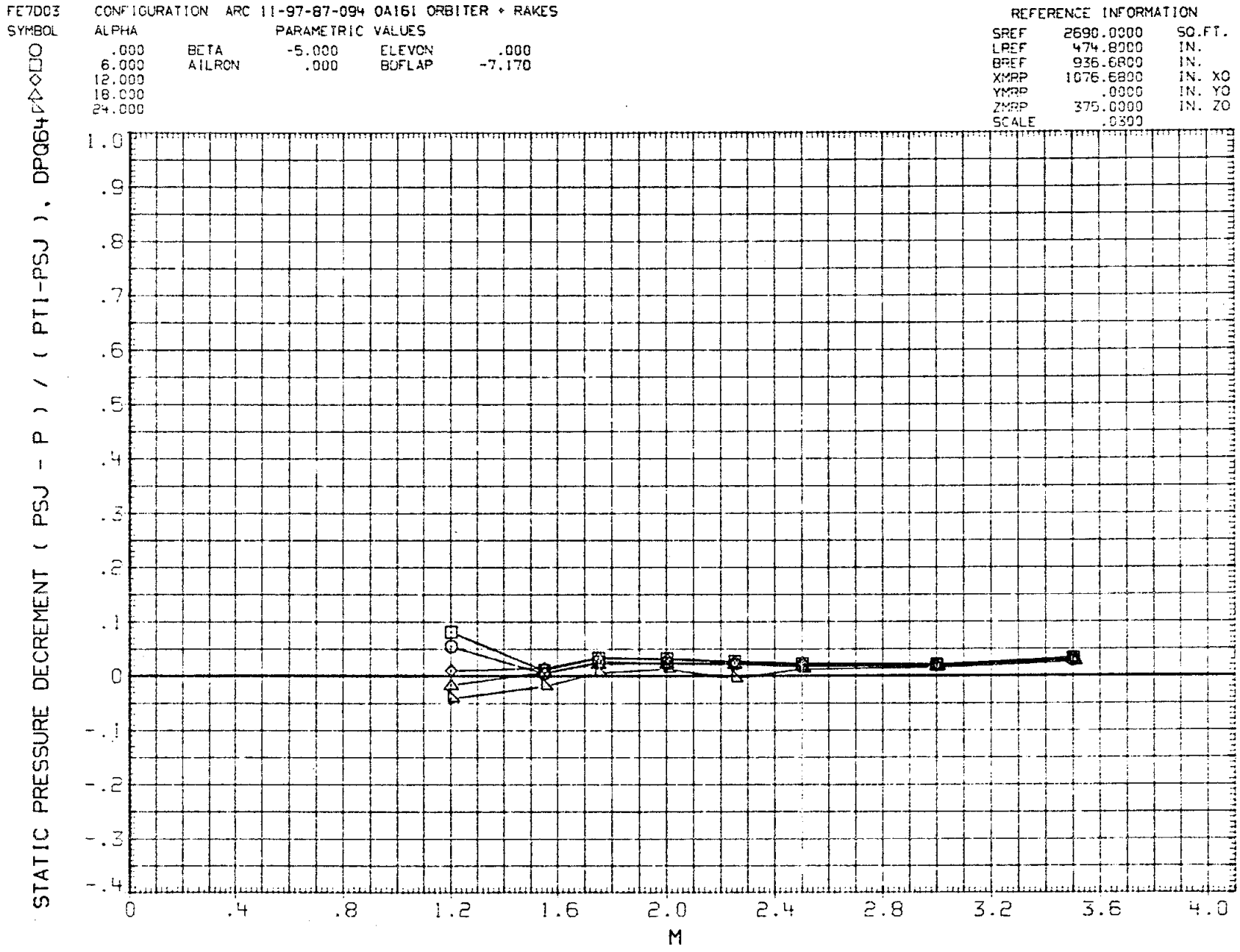


FIG. 16 EFFECT OF ALPHA ON STATIC P. DECREMENT PSJ-P /QIJ RIGHT RAKE

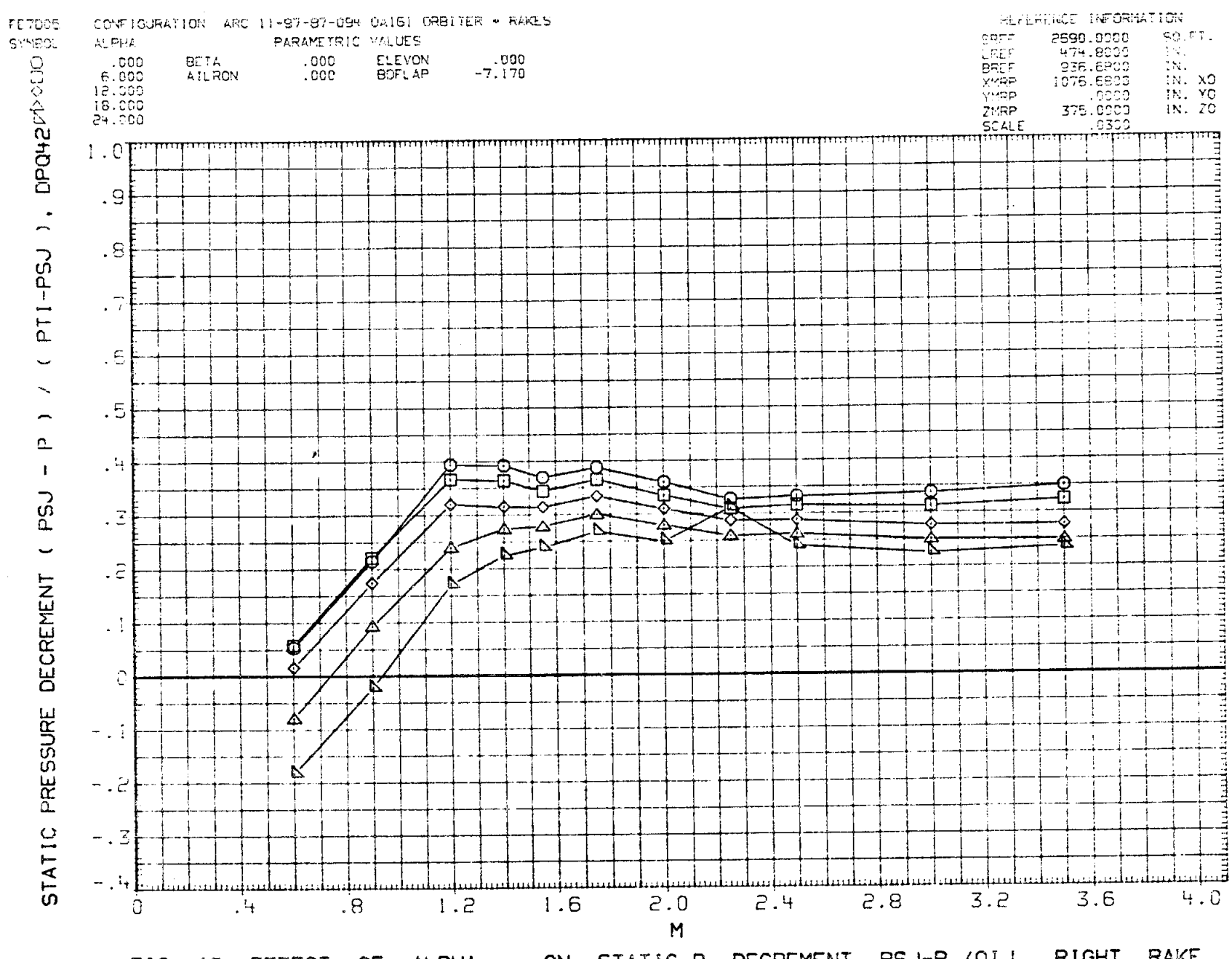


FIG. 16 EFFECT OF ALPHA ON STATIC P. DECREMENT PSJ-P /QIJ RIGHT RAKE

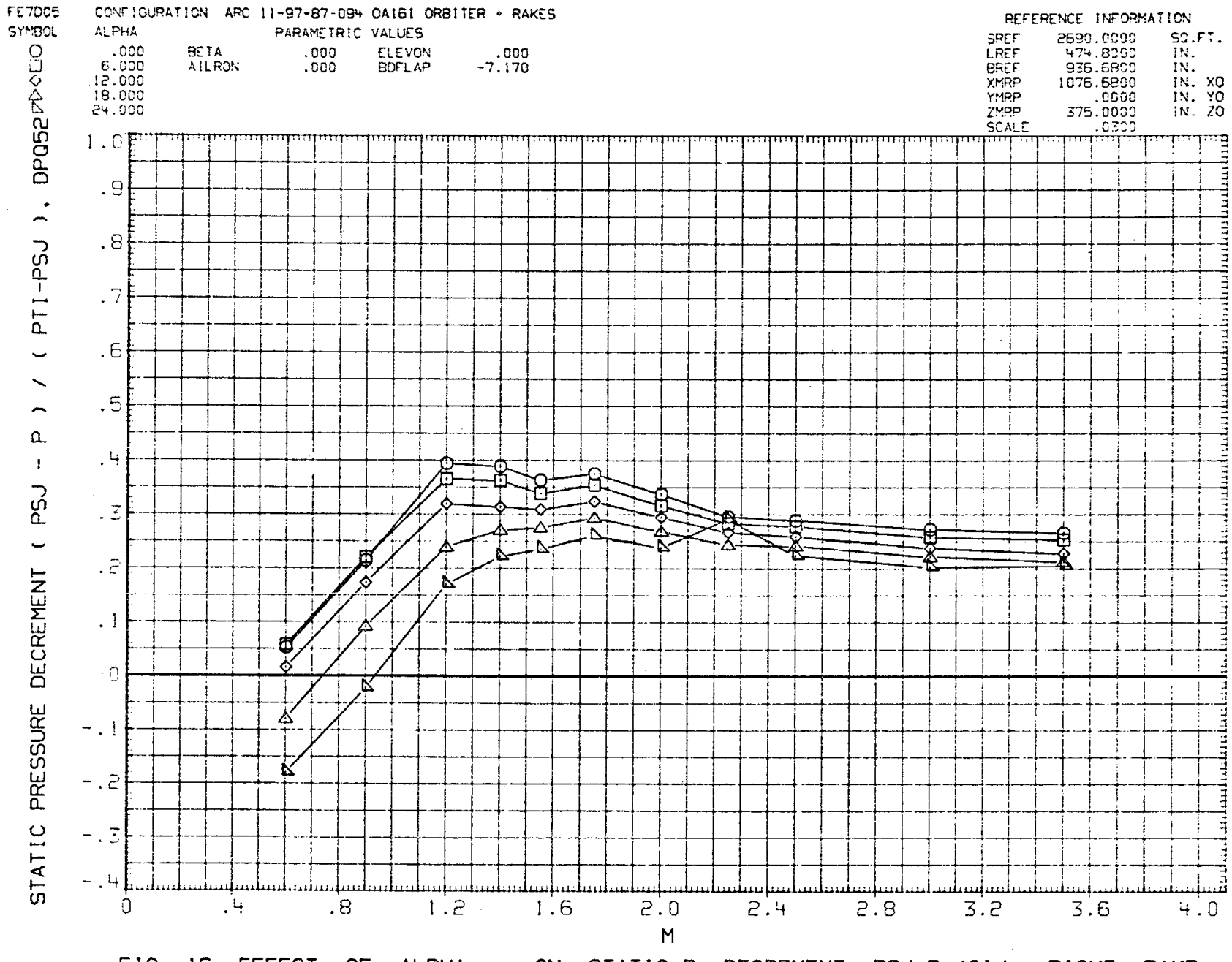


FIG. 16 EFFECT OF ALPHA ON STATIC P. DECREMENT PSJ-P /QIJ RIGHT RAKE

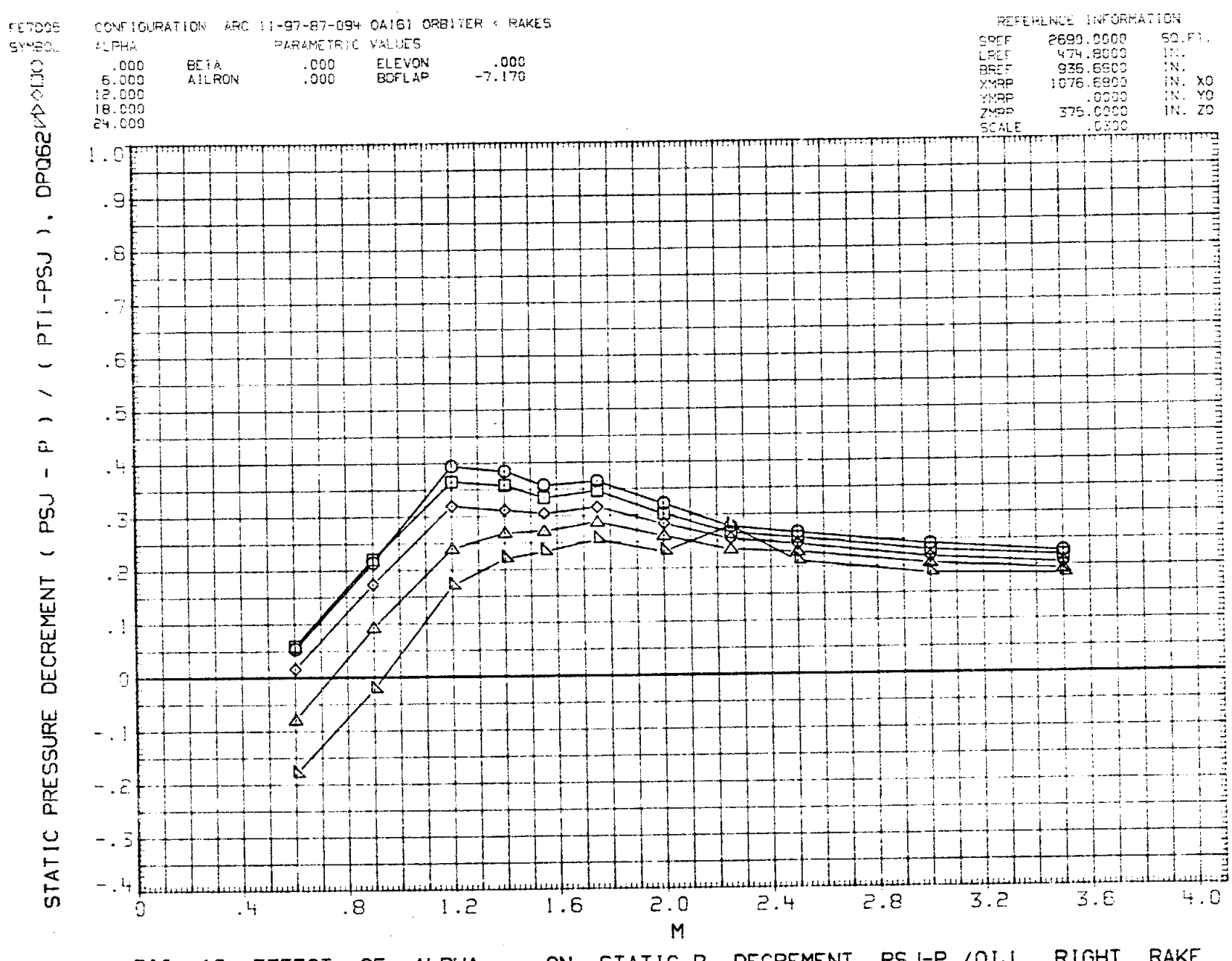


FIG. 16 EFFECT OF ALPHA ON STATIC P. DECREMENT PSJ-P /QIJ RIGHT RAKE

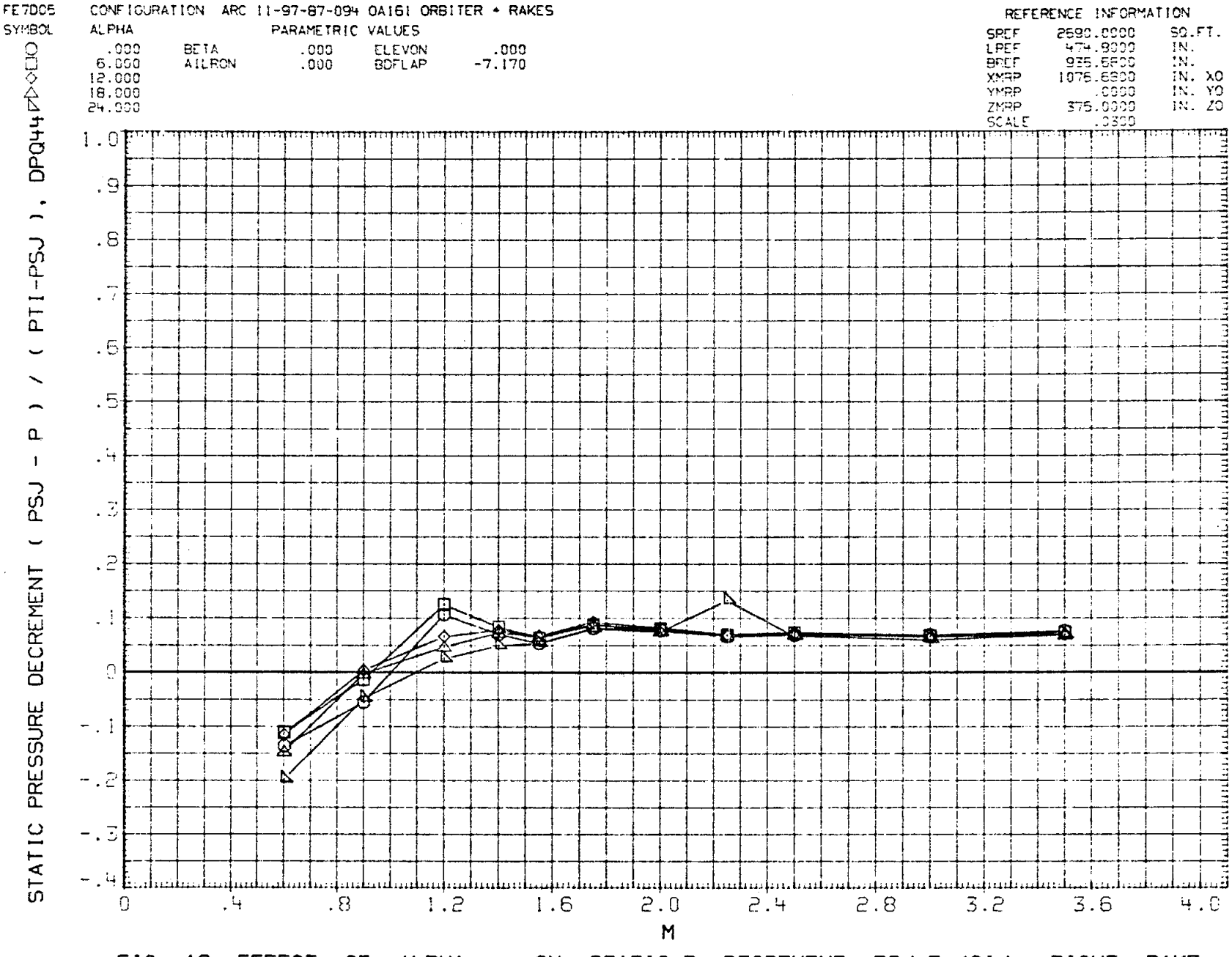


FIG. 16 EFFECT OF ALPHA ON STATIC P. DECREMENT PSJ-P /QIJ RIGHT RAKE

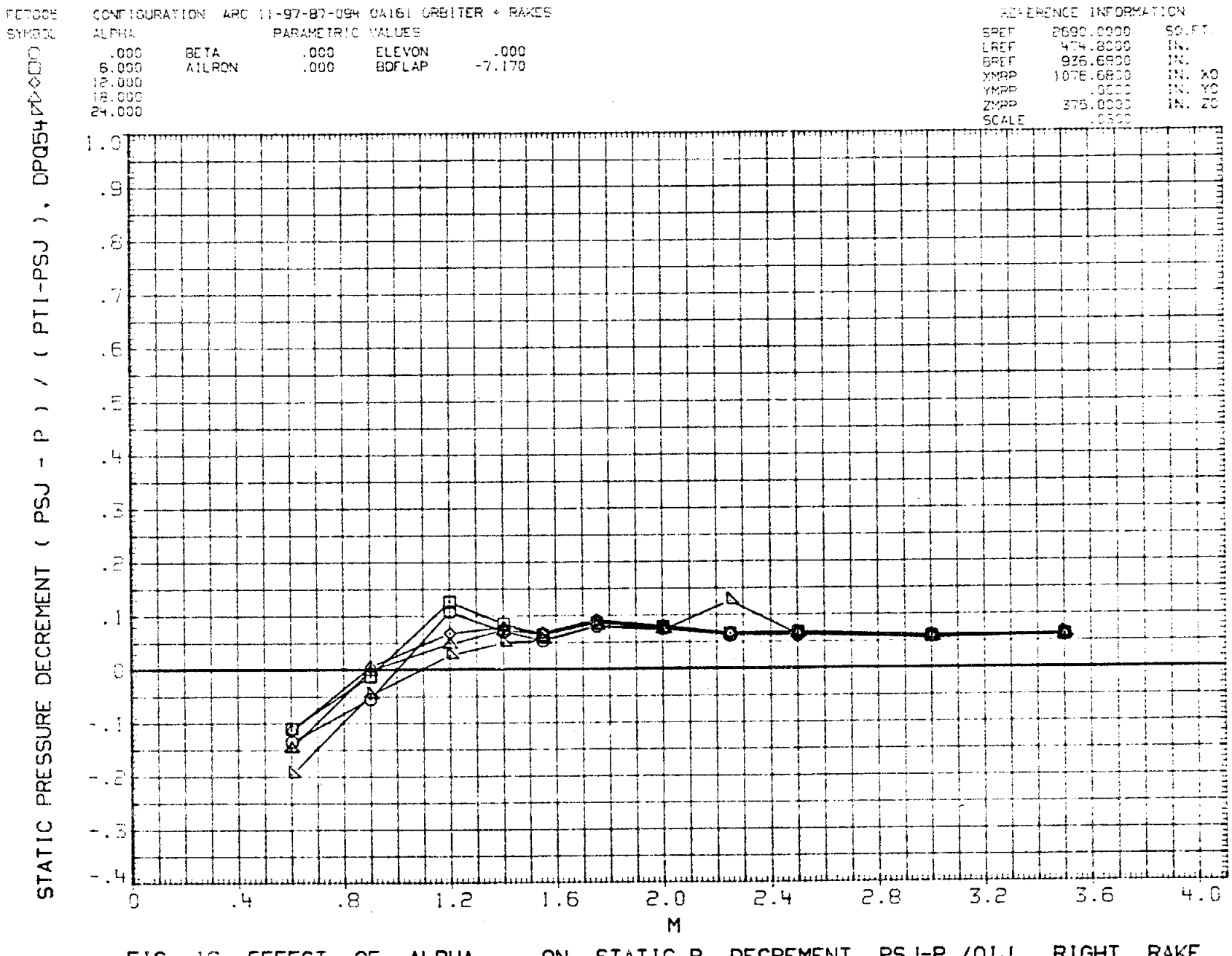


FIG. 16 EFFECT OF ALPHA ON STATIC P. DECREMENT PSJ-P /QIJ RIGHT RAKE

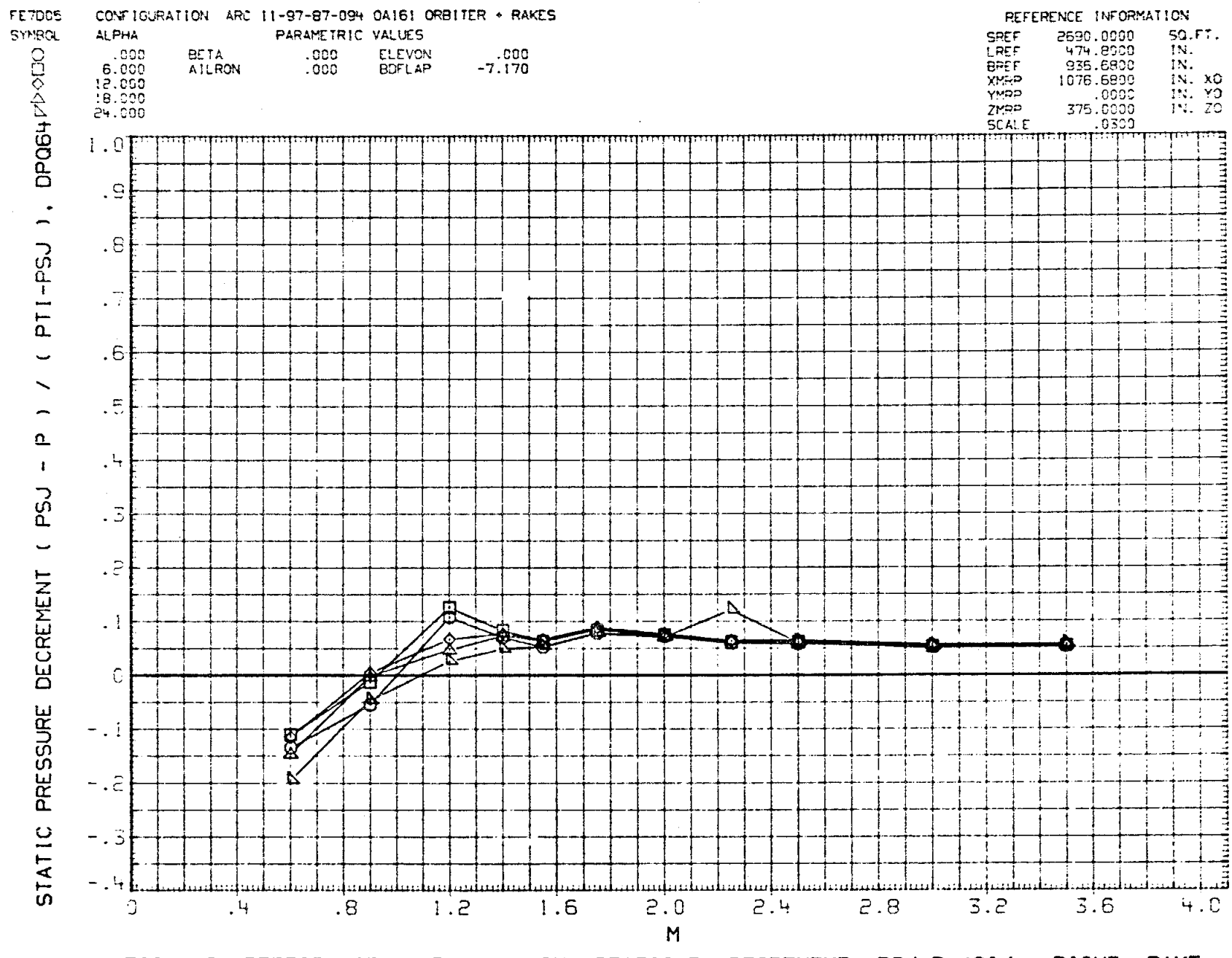


FIG. 16 EFFECT OF ALPHA ON STATIC P. DECREMENT PSJ-P /QIJ RIGHT RAKE

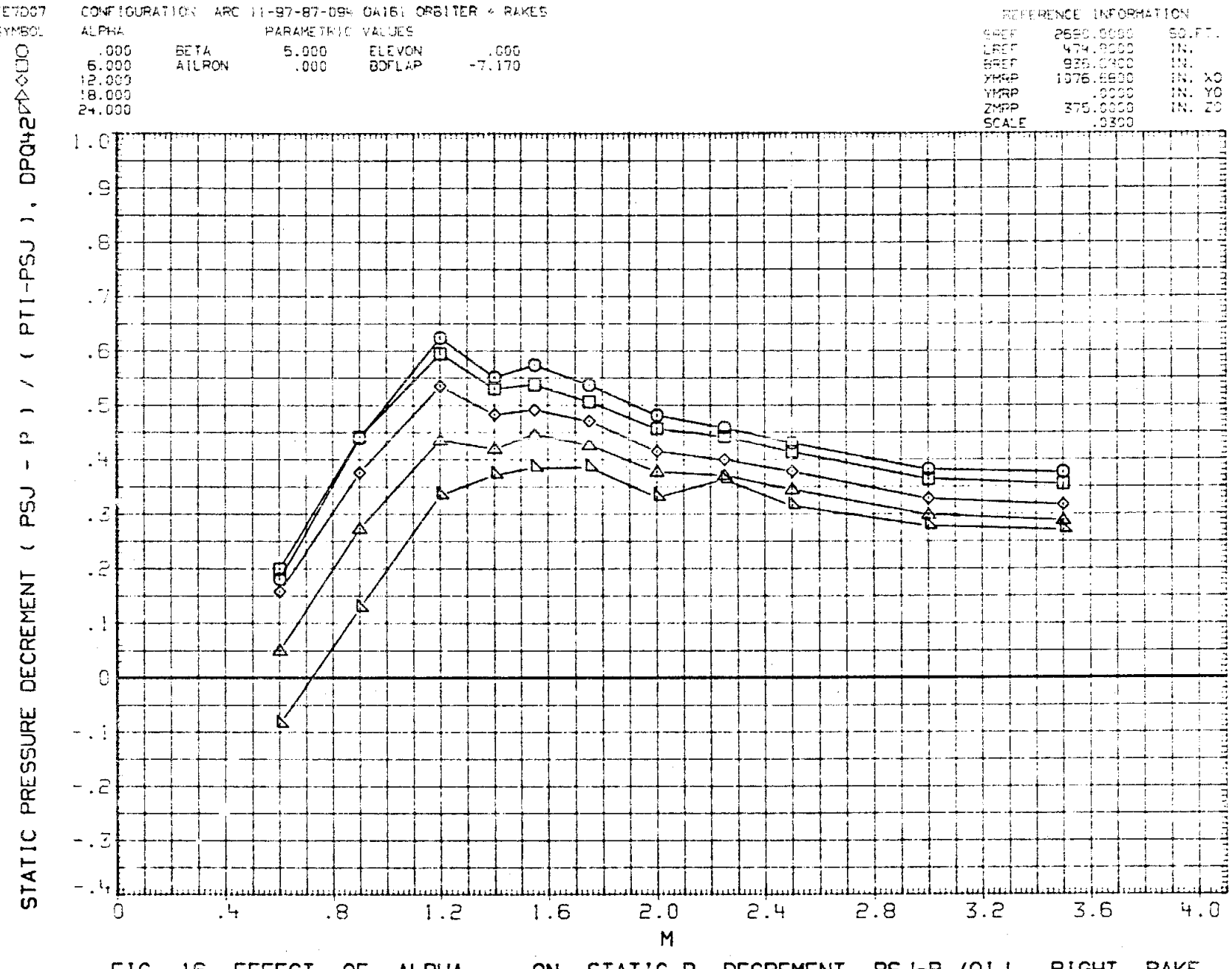


FIG. 16 EFFECT OF ALPHA ON STATIC P. DECREMENT PSJ-P /QIJ RIGHT RAKE

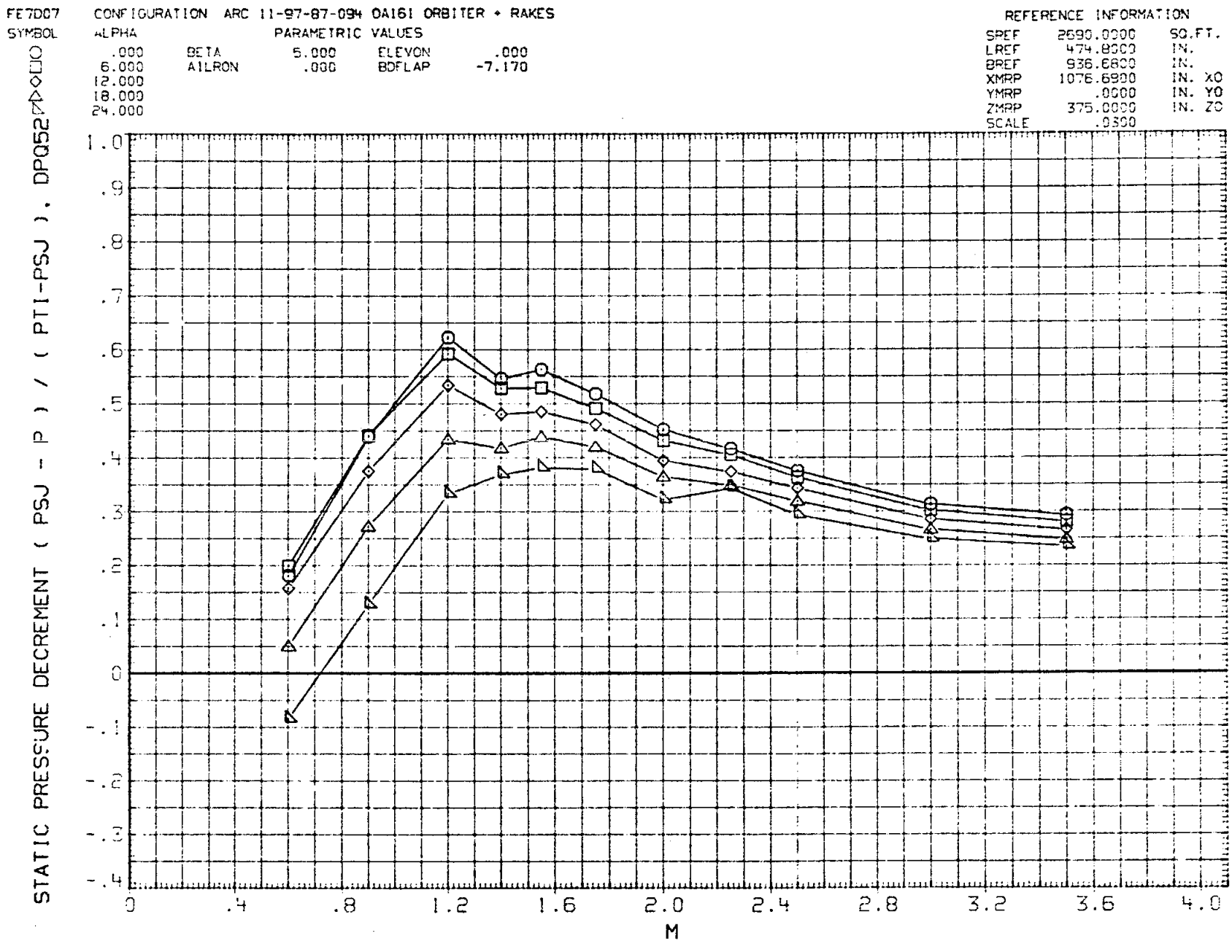


FIG. 16 EFFECT OF ALPHA ON STATIC P. DECREMENT PSJ-P /QIJ RIGHT RAKE

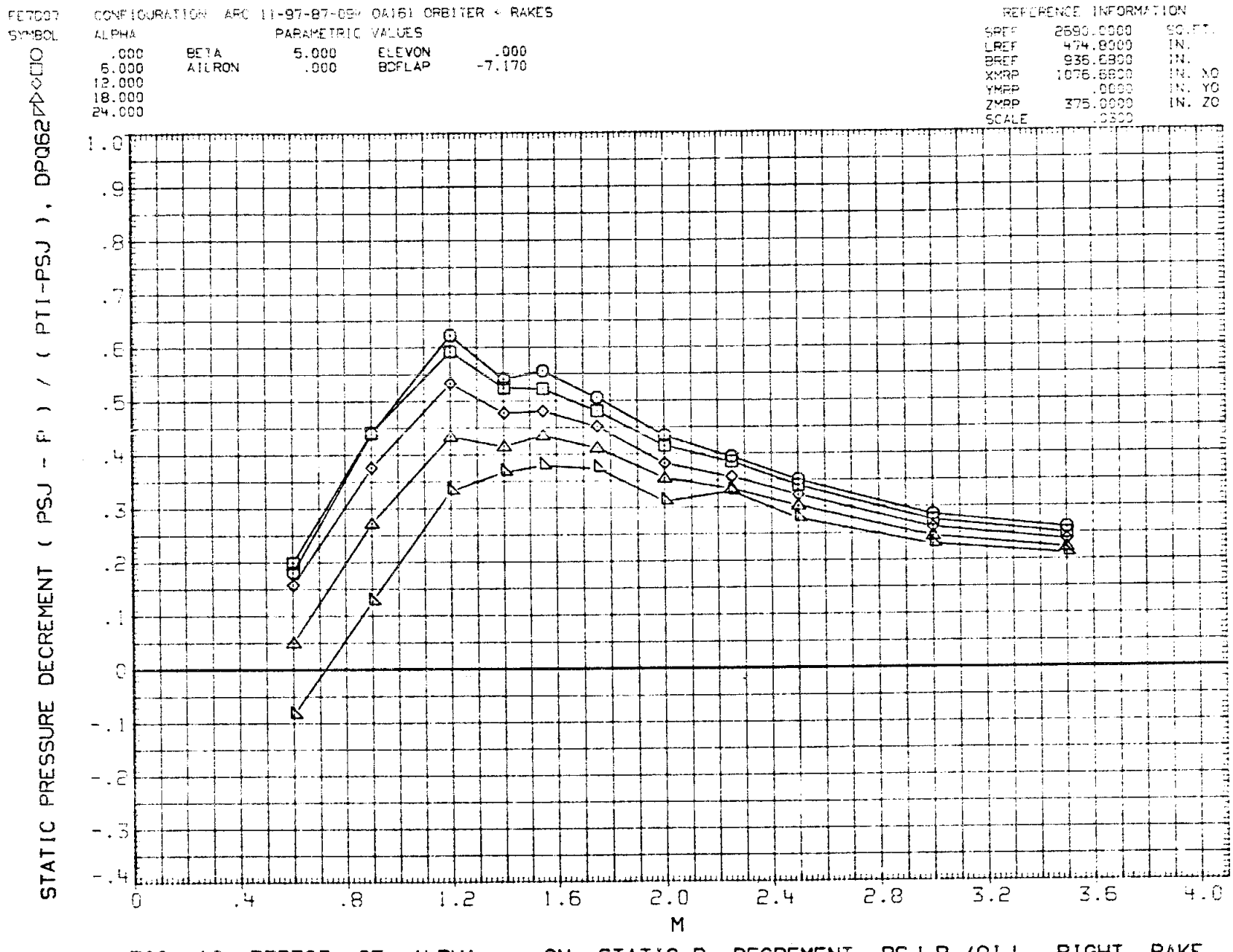


FIG. 16 EFFECT OF ALPHA ON STATIC P. DECREMENT PSJ-P /QIJ RIGHT RAKE

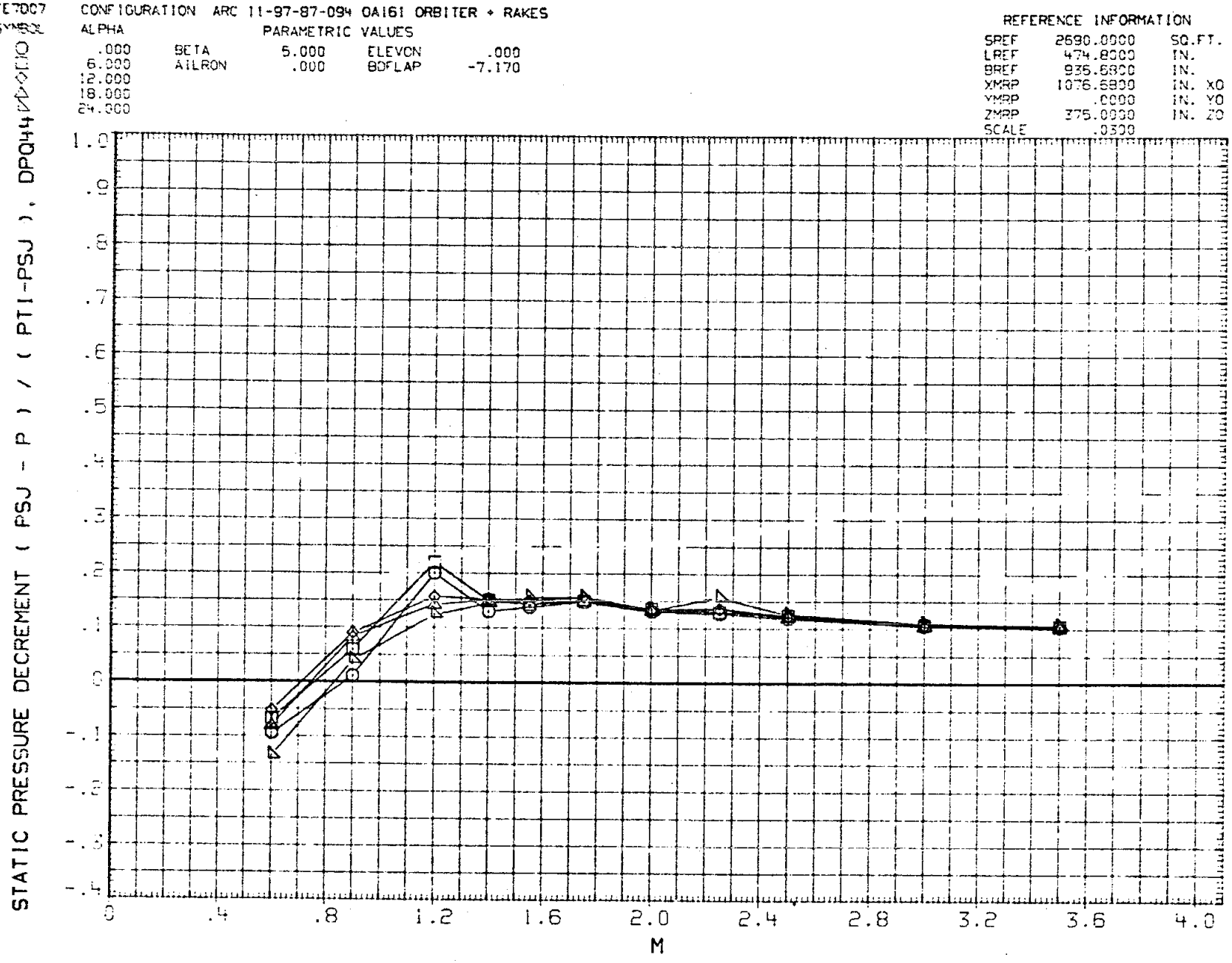


FIG. 16 EFFECT OF ALPHA ON STATIC P. DECREMENT PSJ-P /QIJ RIGHT RAKE

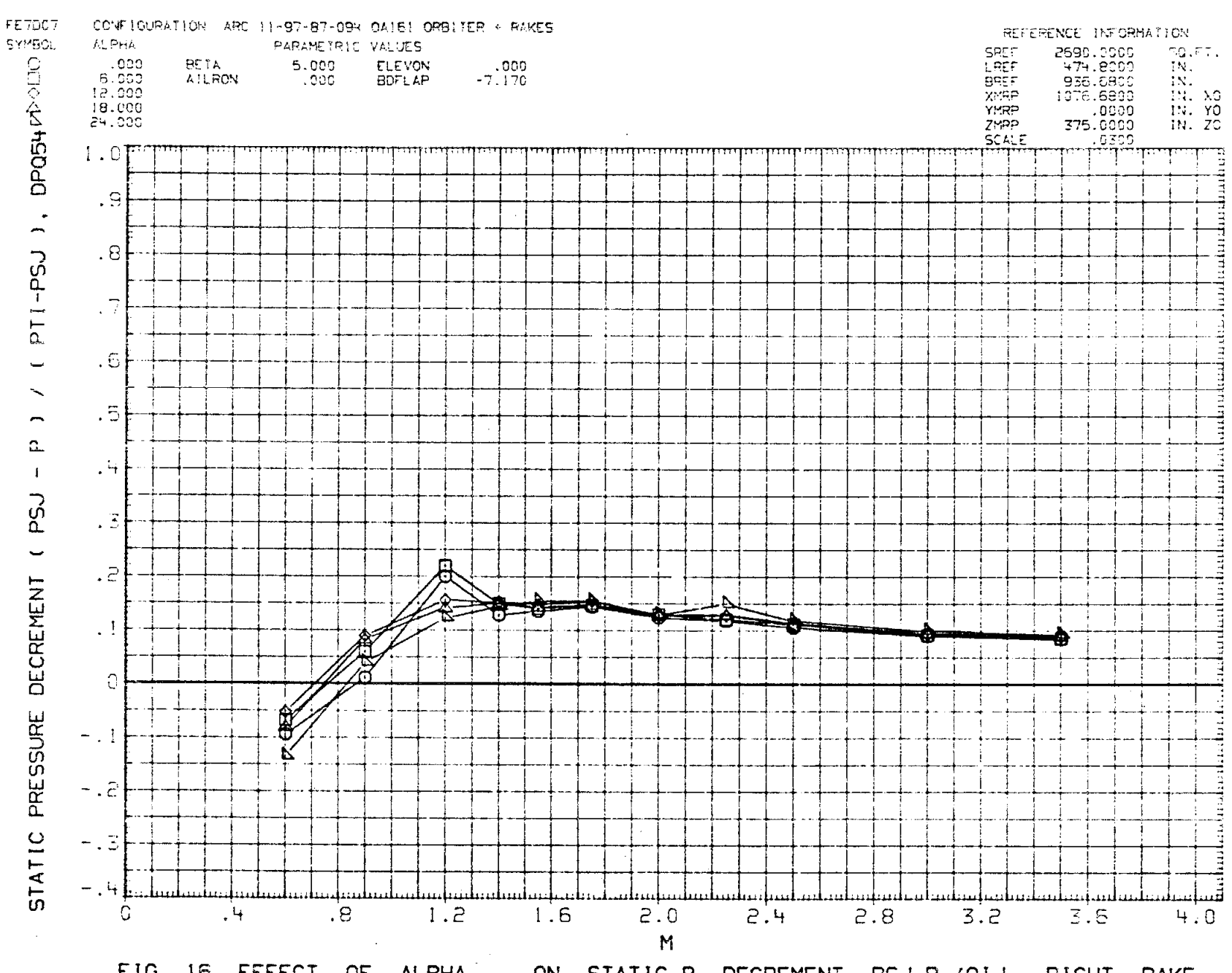


FIG. 16 EFFECT OF ALPHA ON STATIC P. DECREMENT PSJ-P /QIJ RIGHT RAKE

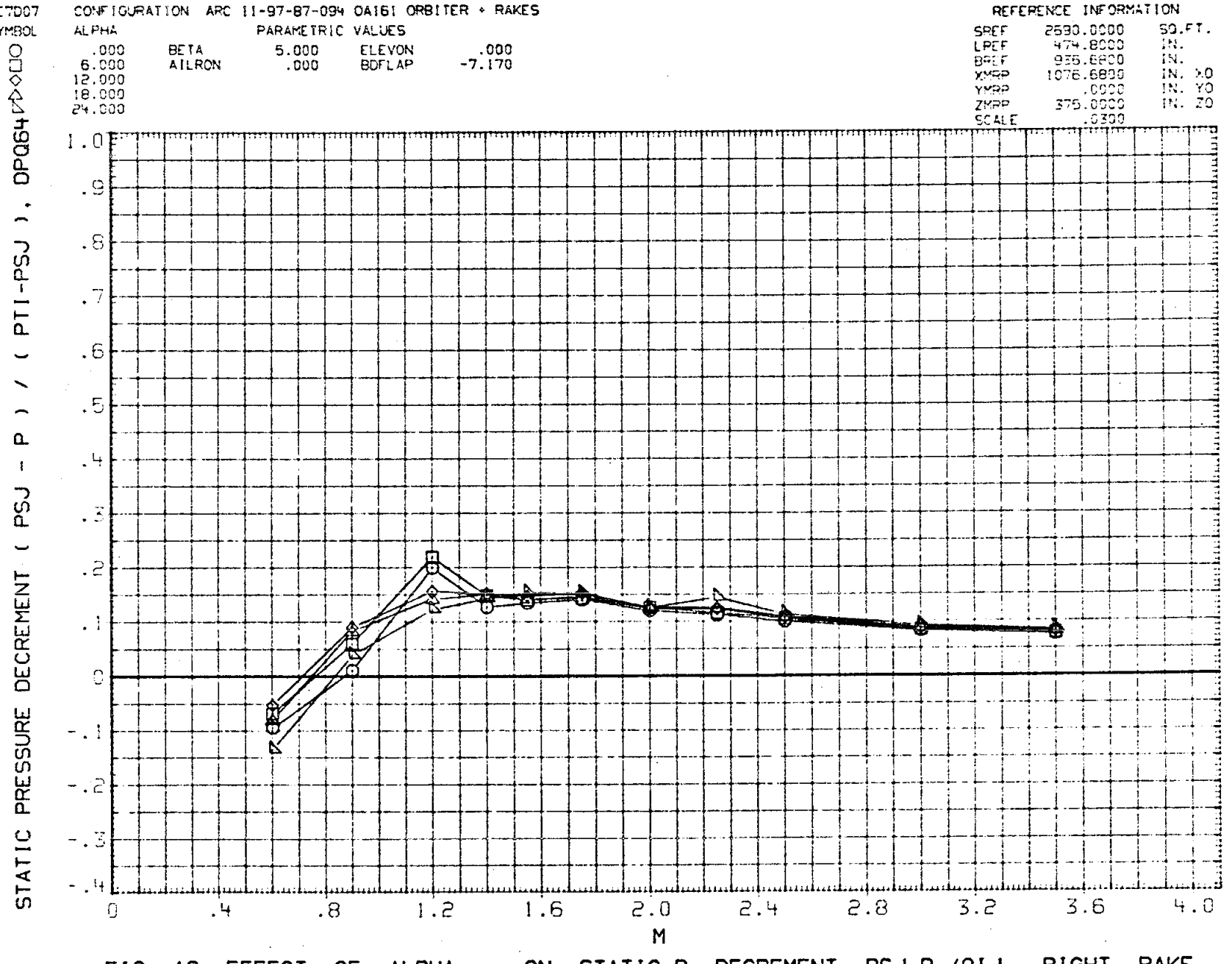


FIG. 16 EFFECT OF ALPHA ON STATIC P. DECREMENT PSJ-P /QIJ RIGHT RAKE

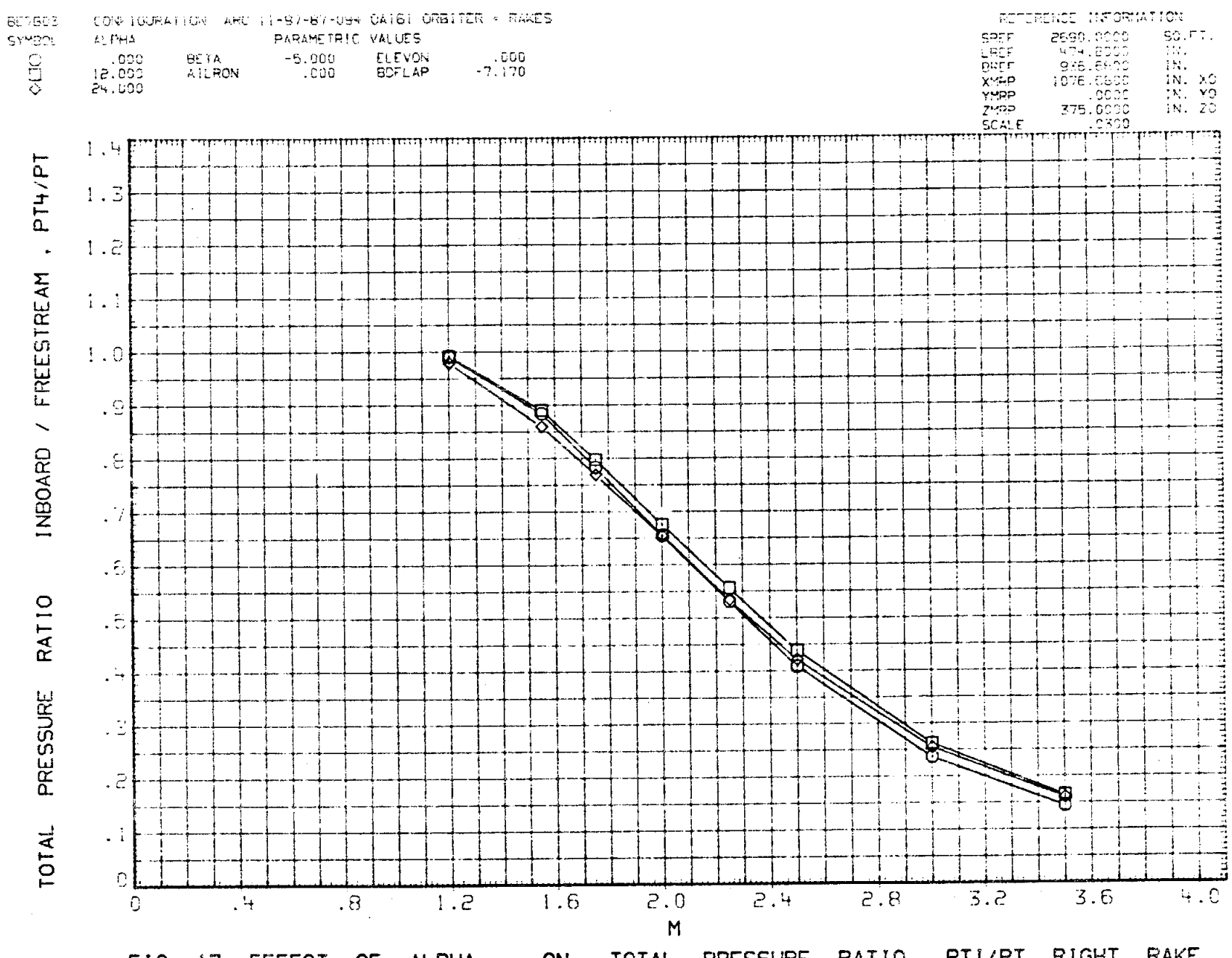


FIG. 17 EFFECT OF ALPHA ON TOTAL PRESSURE RATIO PTI/PT RIGHT RAKE

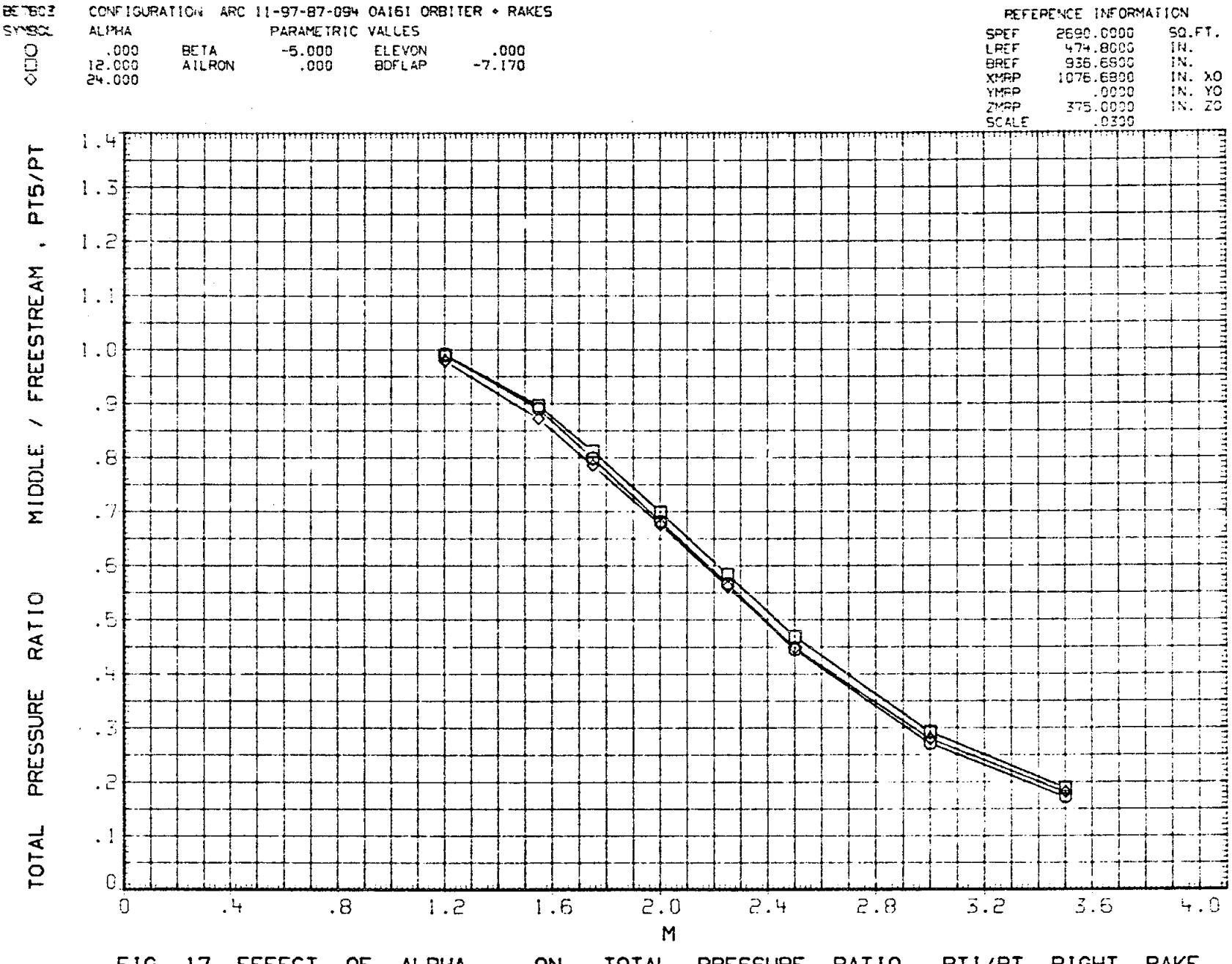


FIG. 17 EFFECT OF ALPHA ON TOTAL PRESSURE RATIO PTI/PT RIGHT RAKE

BETBOS CONFIGURATION ARC 11-97-87-094 OA161 ORBITER + RAKES

SYMBOL	ALPHA		PARAMETRIC VALUES		
◇	.000	BETA	-5.000	ELEVON	.000
	12.000	AILRON	.000	BOFLAP	-7.170
	24.000				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.5800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.9000	IN. ZO
SCALE	.0500	

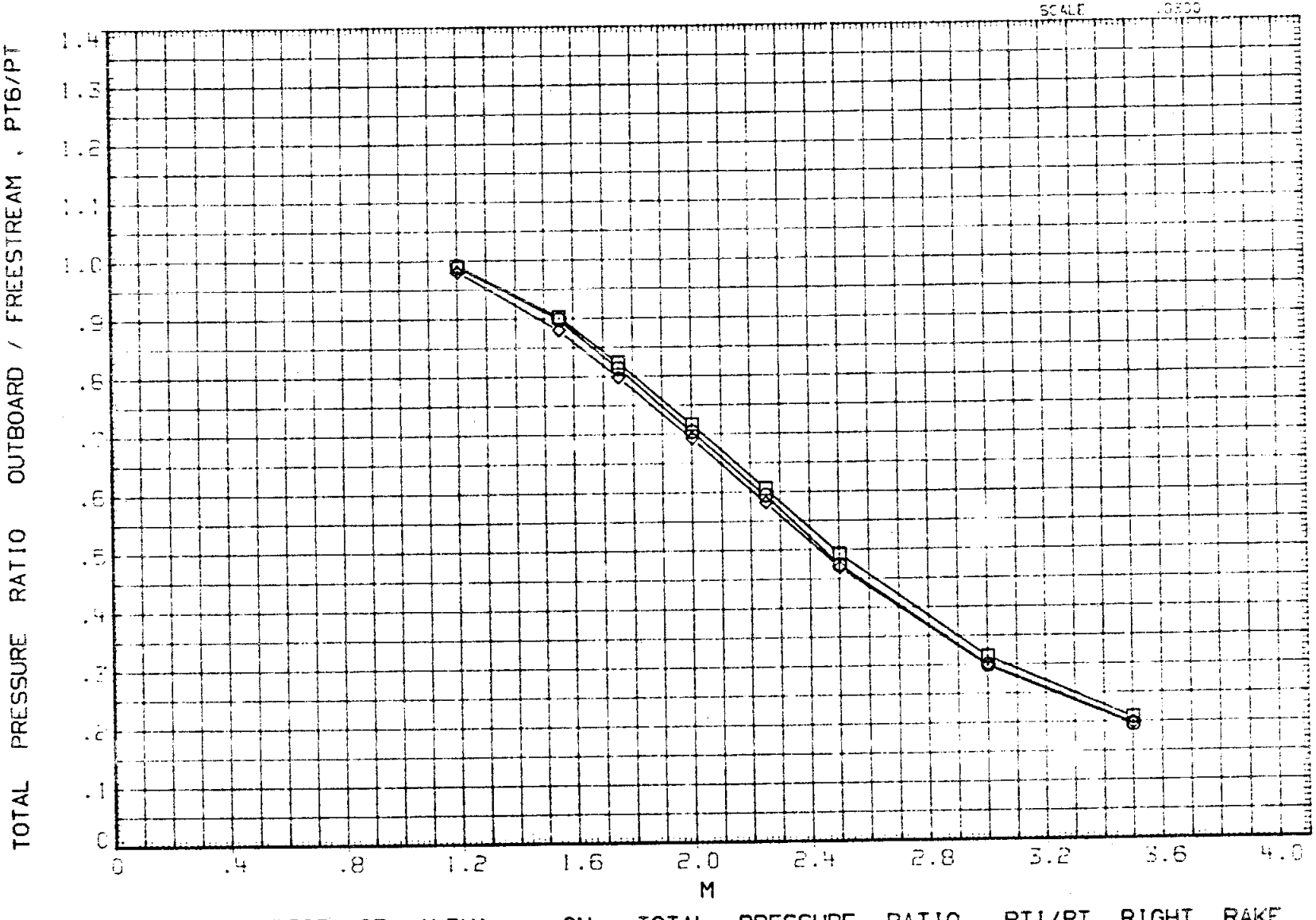


FIG. 17 EFFECT OF ALPHA ON TOTAL PRESSURE RATIO PTI/PT RIGHT RAKE

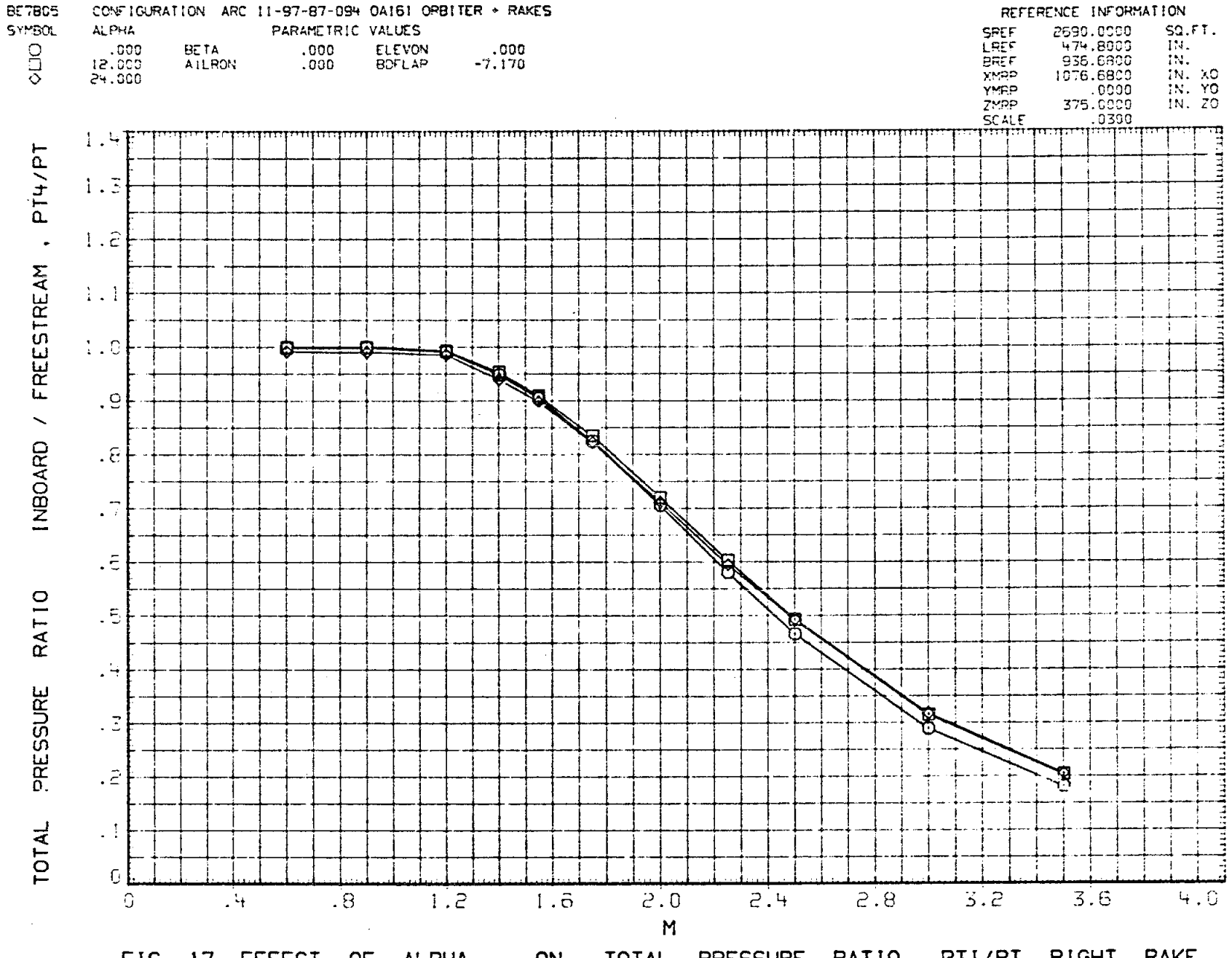


FIG. 17 EFFECT OF ALPHA ON TOTAL PRESSURE RATIO PTI/PT RIGHT RAKE

BE7805 CONFIGURATION ARC 11-97-87-094 OA161 ORBITER + RAKES

SYMBOL	ALPHA		PARAMETRIC VALUES		
◇(D)	.000	BETA	.000	ELEVON	.000
	12.000	AILRON	.000	BDFLAP	-7.170
	24.000				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0600	

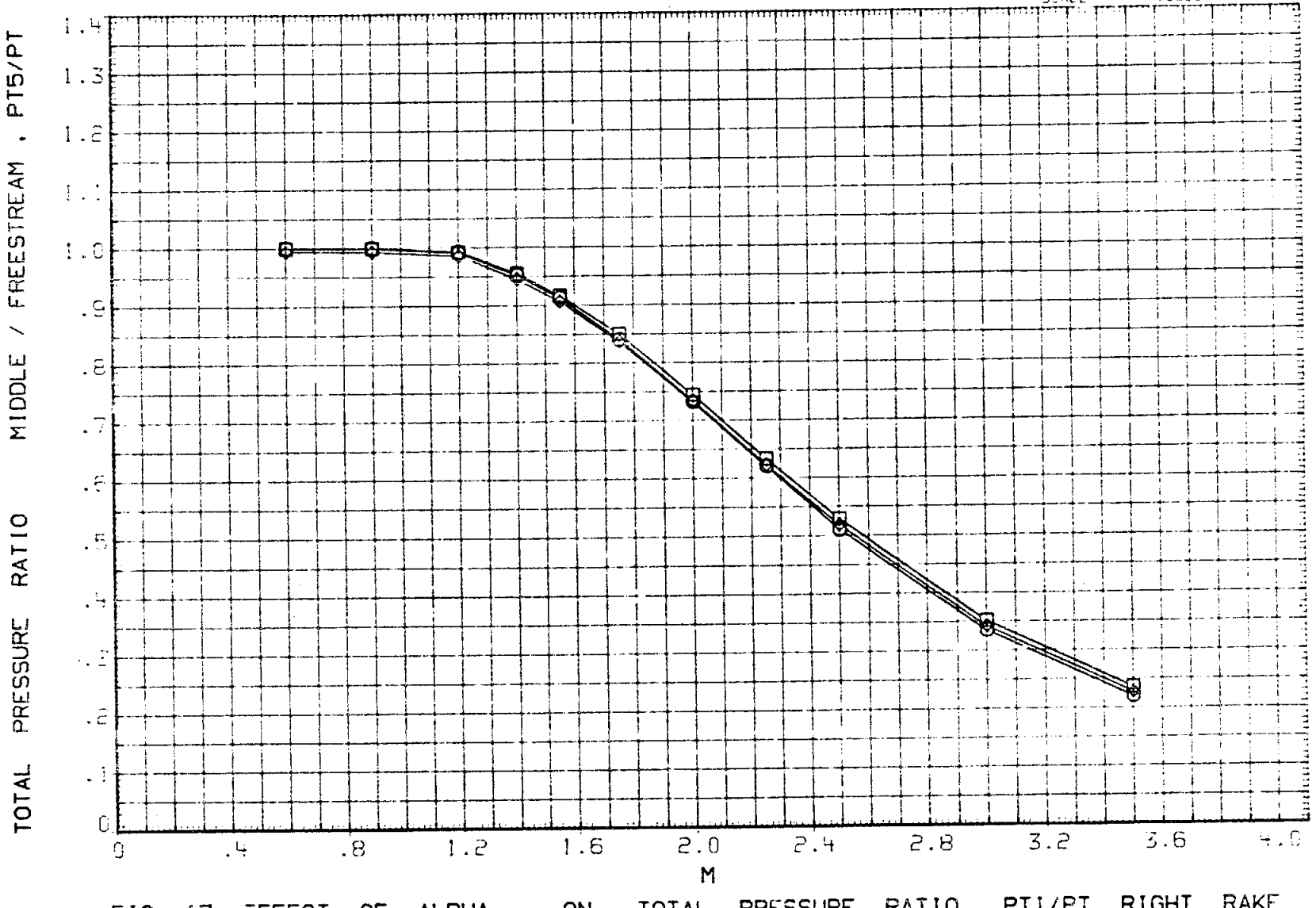


FIG. 17 EFFECT OF ALPHA ON TOTAL PRESSURE RATIO PTI/PT RIGHT RAKE

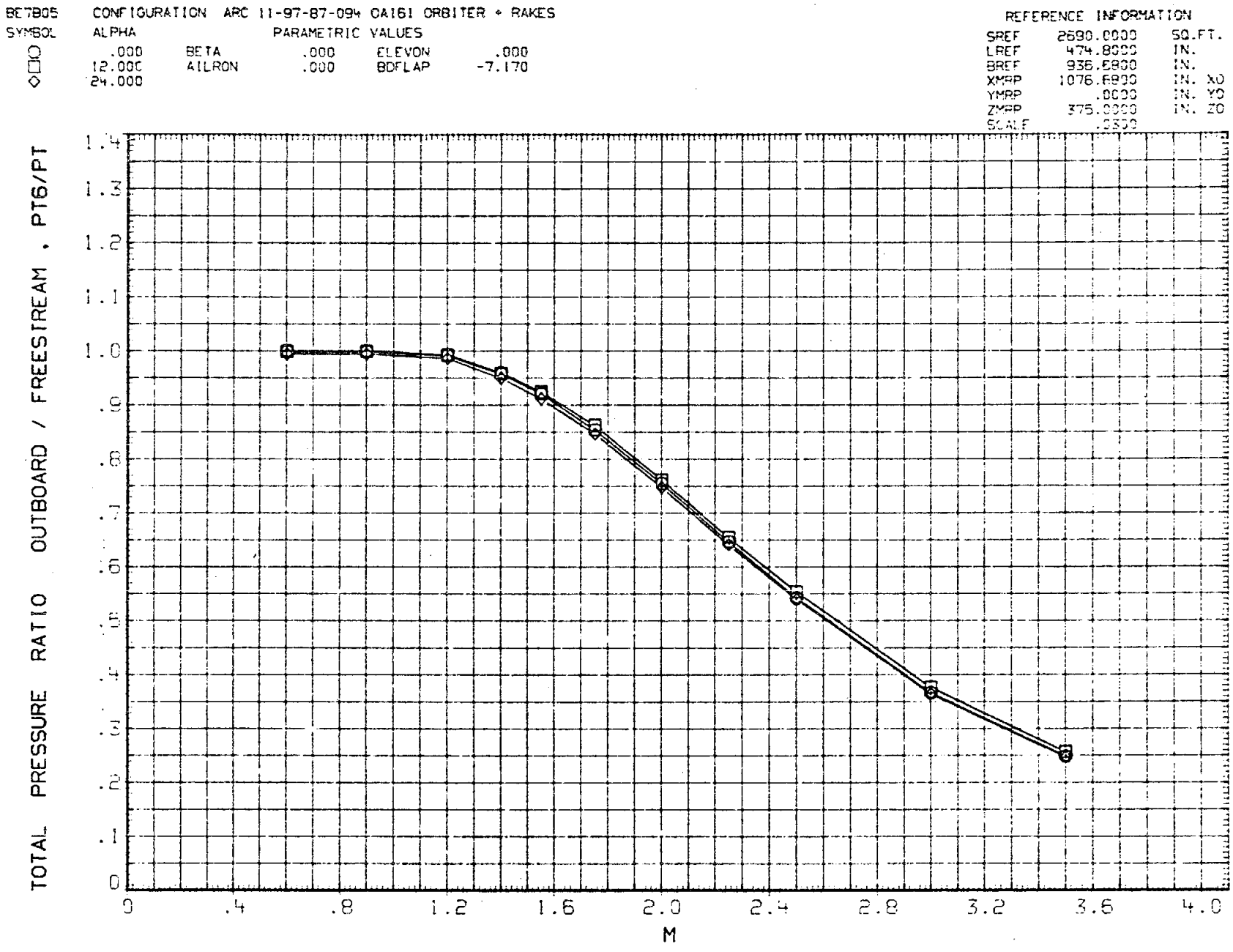


FIG. 17 EFFECT OF ALPHA ON TOTAL PRESSURE RATIO PTI/PT RIGHT RAKE

BF7807 CONFIGURATION ARC 11-97-87-094 0A161 ORBITER + RAKES

SYMBOL	ALPHA		PARAMETRIC VALUES		
◇□○	.000	BETA	5.000	ELEVON	.000
	12.000	AILRON	.000	BDFLAP	-7.170
	24.000				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6900	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

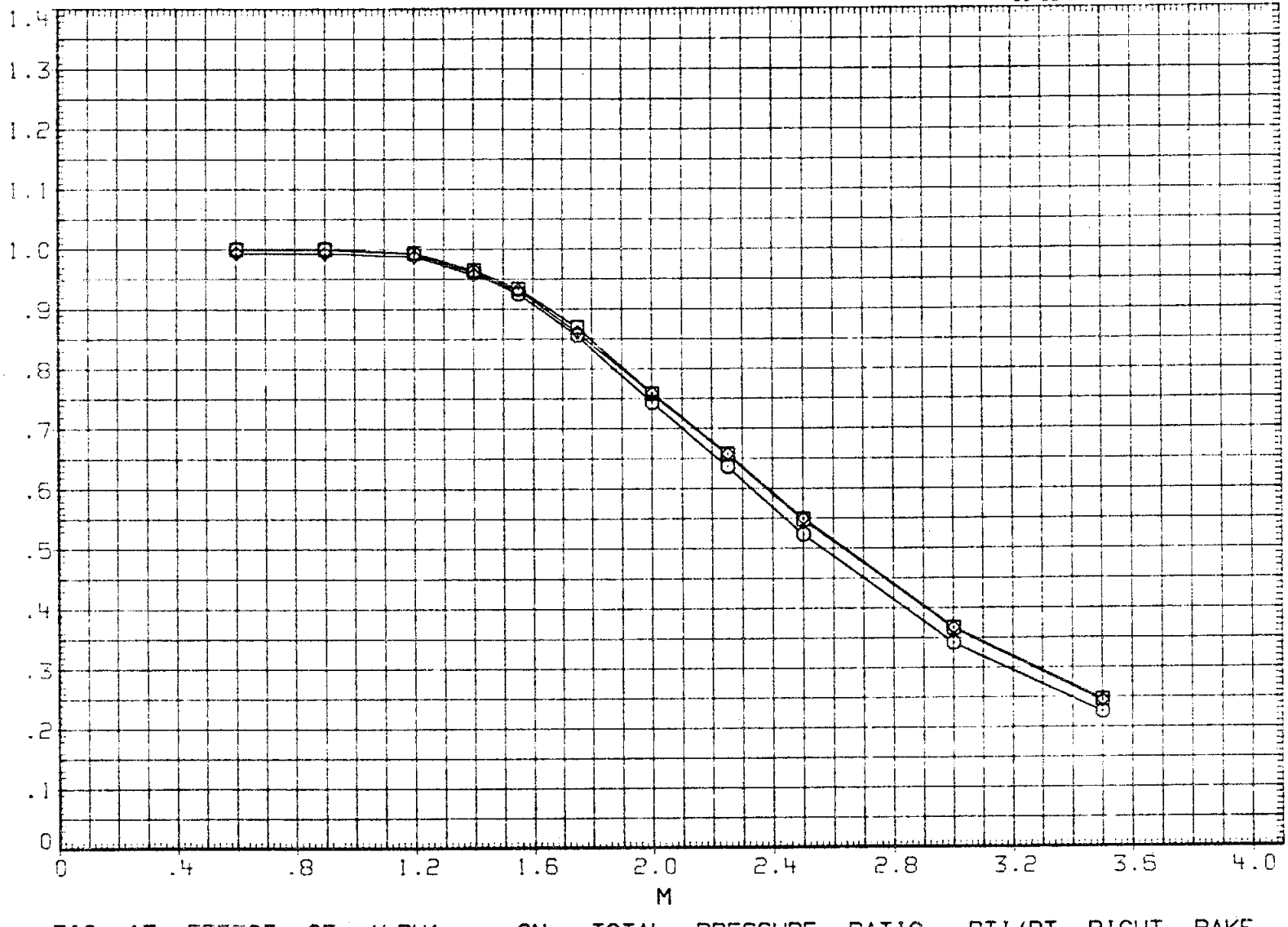


FIG. 17 EFFECT OF ALPHA ON TOTAL PRESSURE RATIO PTI/PT RIGHT RAKE

BE7B07 CONFIGURATION ARC 11-97-87-094 OA161 ORBITER + RAKES

SYMBOL ALPHA PARAMETRIC VALUES

◇ .000 BETA 5.000 ELEVON .000
12.000 AILRON .000 BDFLAP -7.170
24.000

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

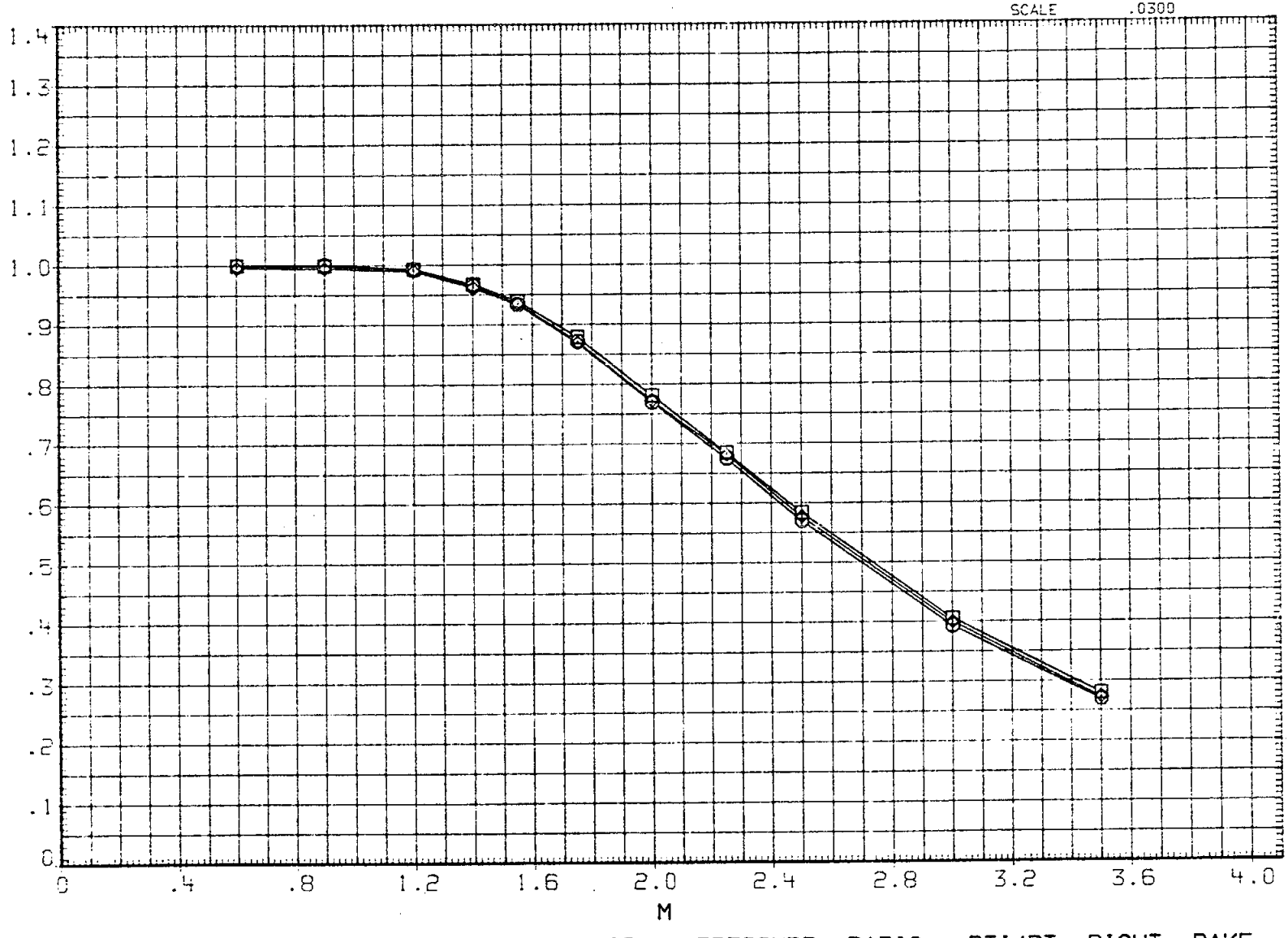


FIG. 17 EFFECT OF ALPHA ON TOTAL PRESSURE RATIO PTI/PT RIGHT RAKE

BE7B07 CONFIGURATION ARC 11-97-87-094 OA161 ORBITER + RAKES

SYMBOL	ALPHA		PARAMETRIC VALUES		
◇	.000	BETA	5.000	ELEVON	.000
	12.000	AILRON	.000	BDFLAP	-7.170
	24.000				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

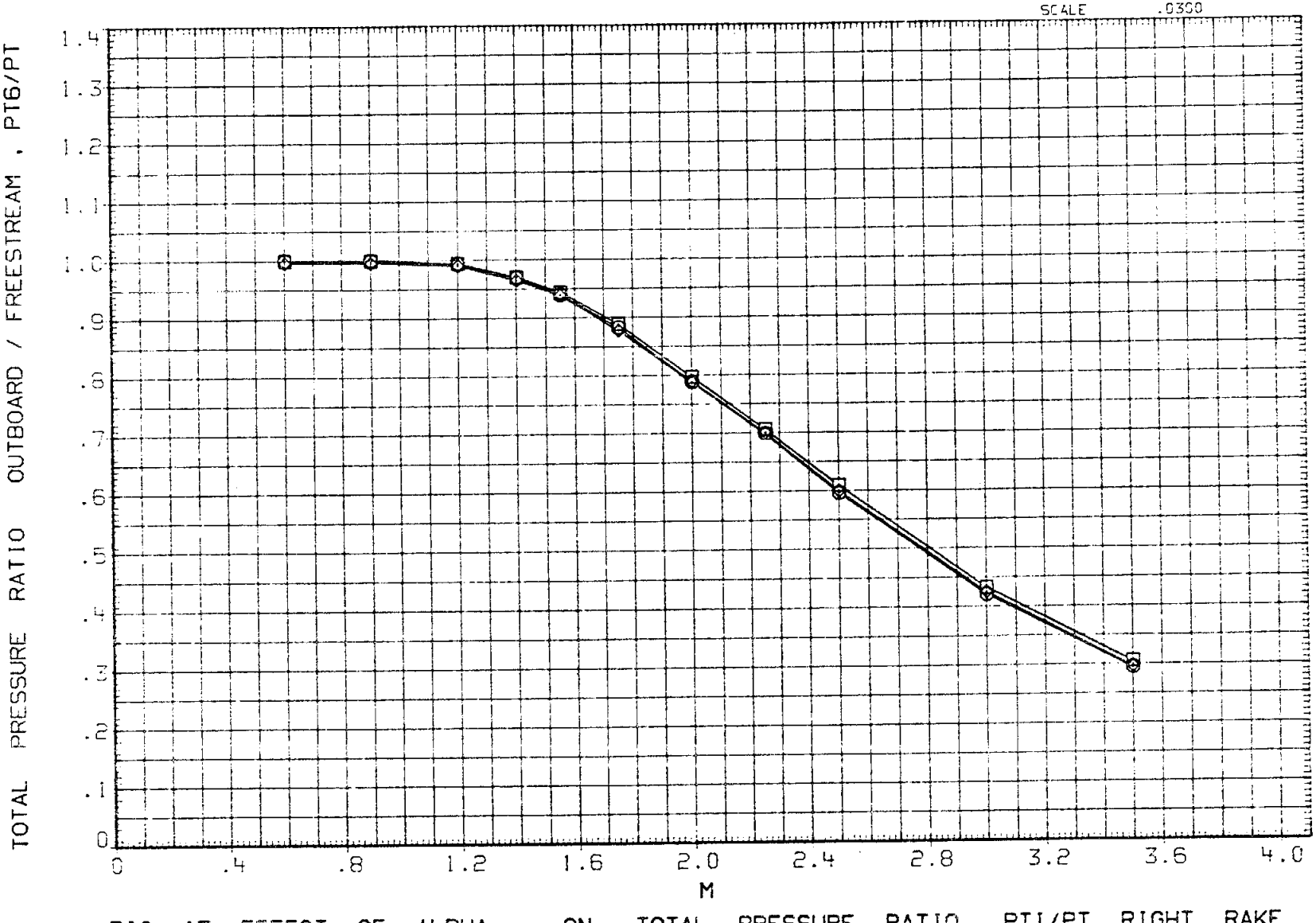


FIG. 17 EFFECT OF ALPHA ON TOTAL PRESSURE RATIO PTI/PT RIGHT RAKE

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
EE7X03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE7X05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EE7X07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE7X01	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

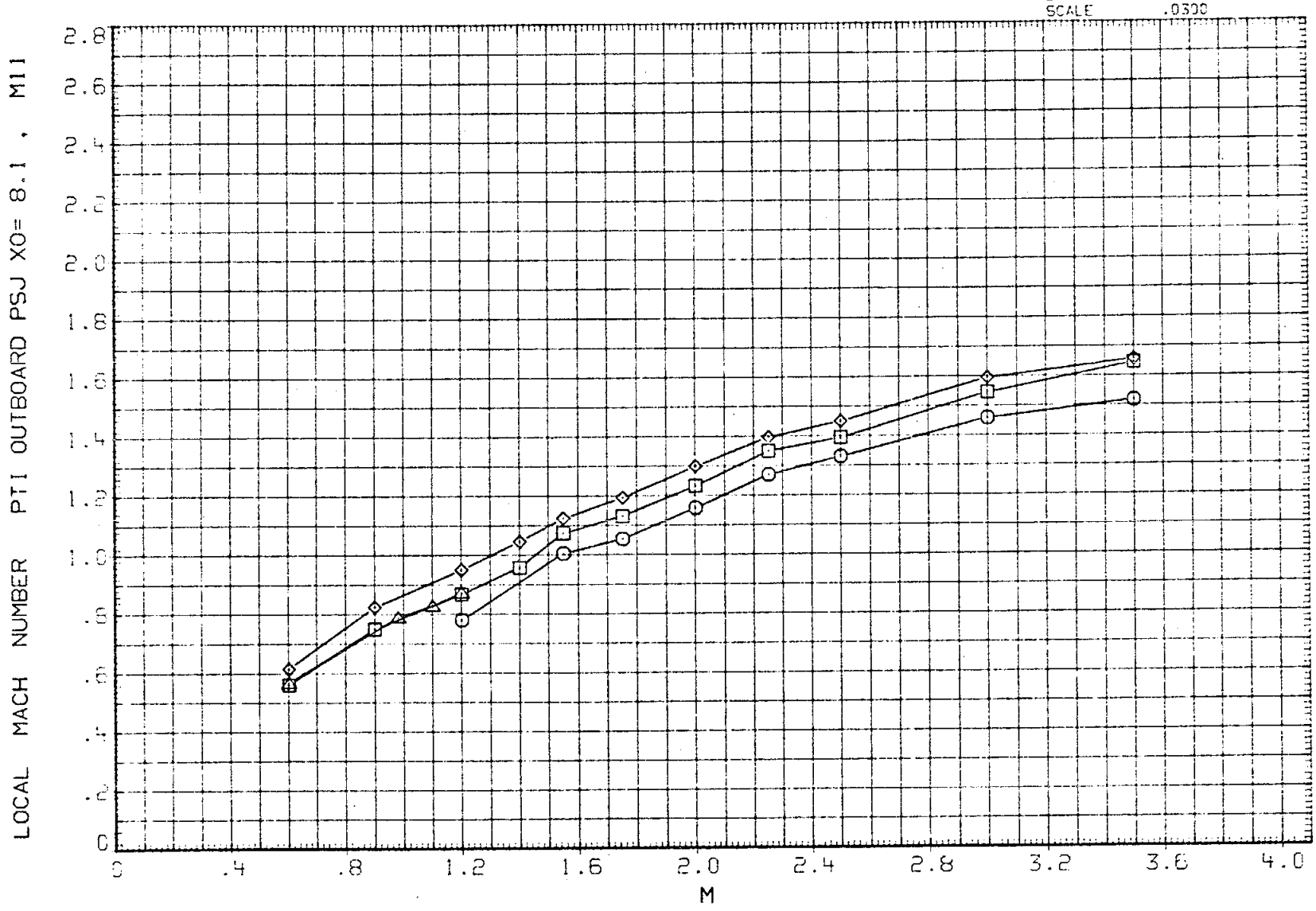


FIG. 18 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

(A) ALPHA = .00

ATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
EE7X03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE7X05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EE7X07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE7X01	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.5800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

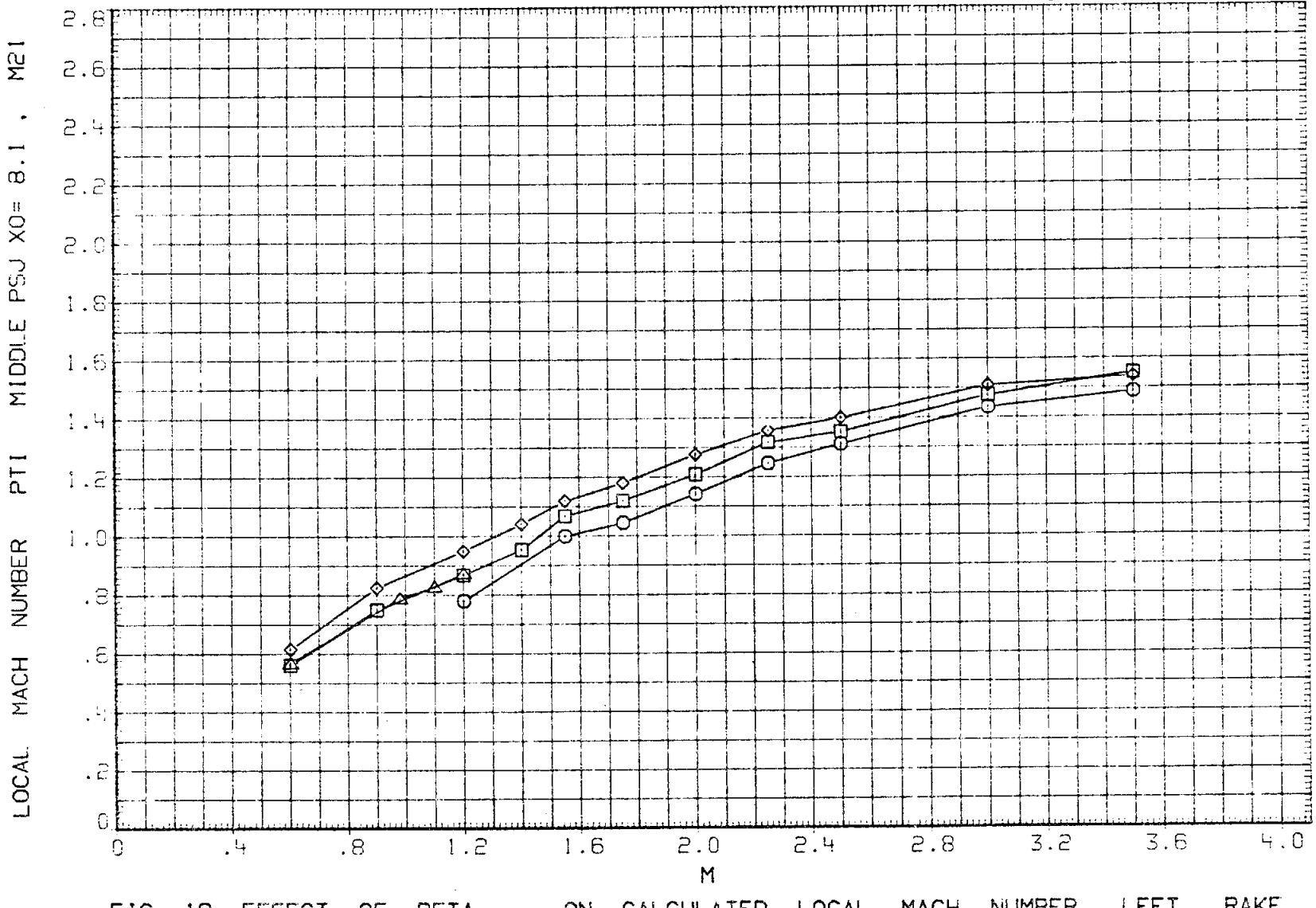


FIG. 18 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

(A) ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
EE7X03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE7X05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EE7X07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE7X01	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

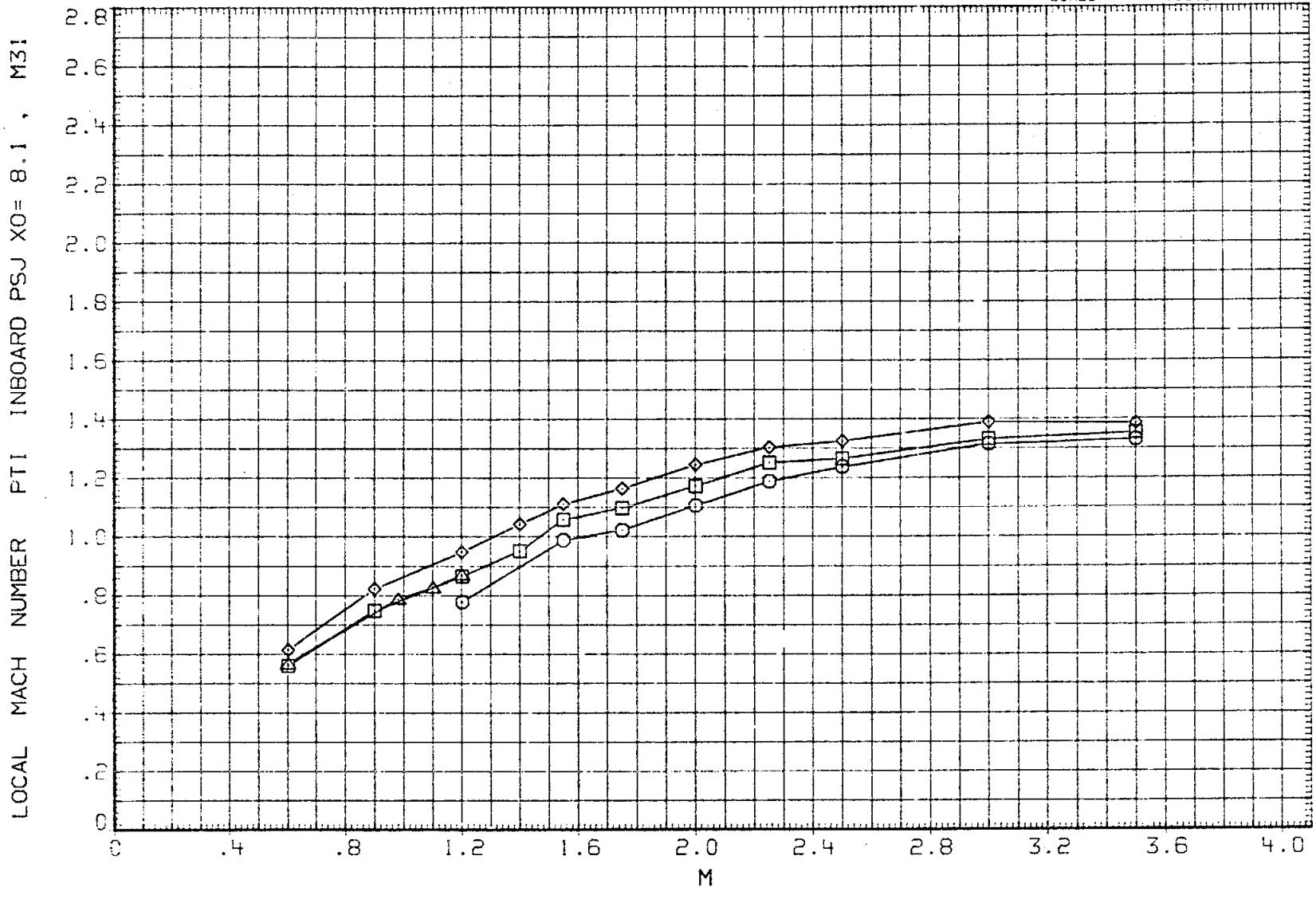


FIG. 18 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

(A) ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
EETX03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EETX05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EETX07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EETX01	△	ARC 11-97-87-094 OA161 ORBITER + WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	935.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

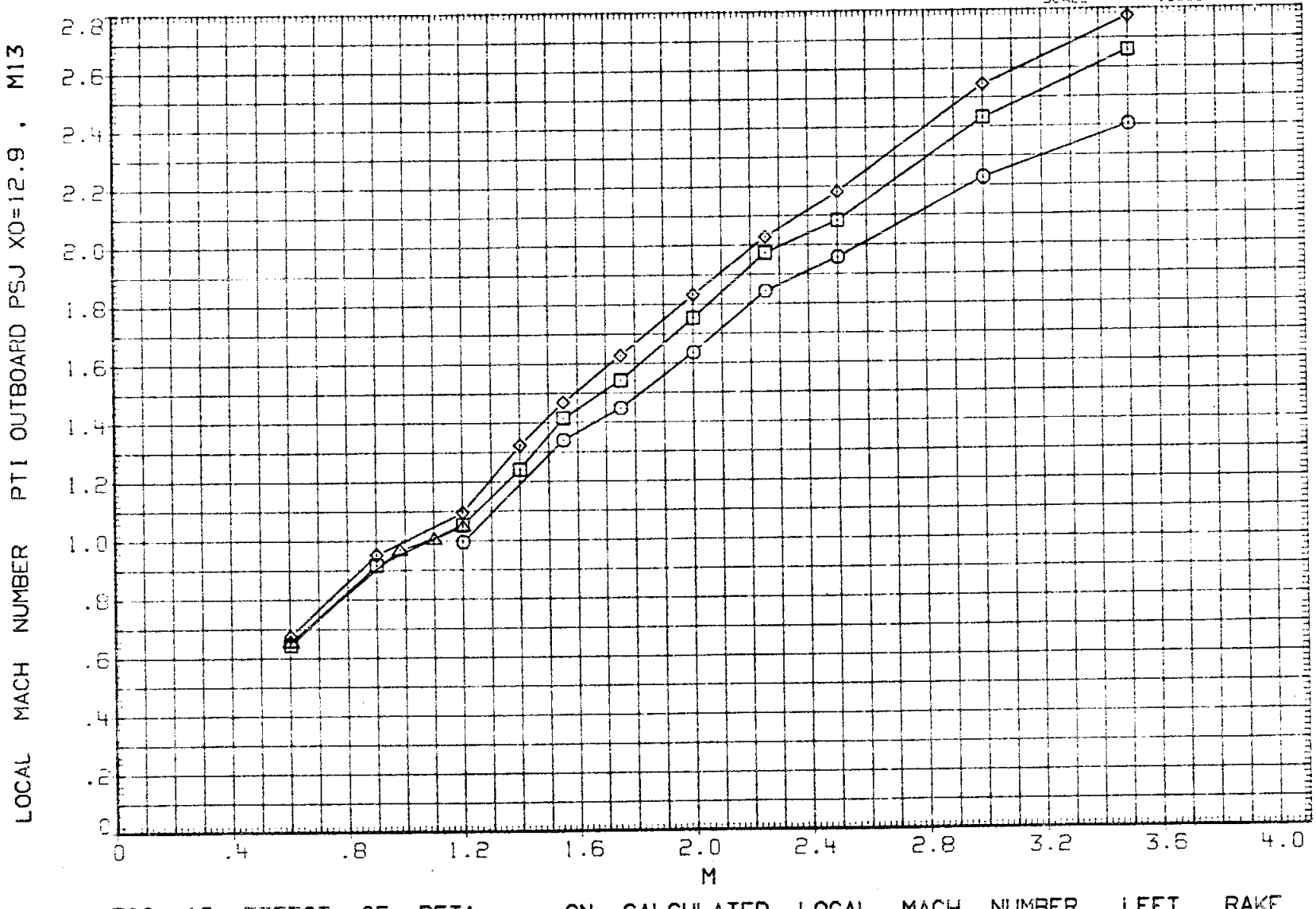


FIG. 18 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

(A)ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
[illegible]	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
[illegible]	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
[illegible]	△	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
[illegible]	○	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

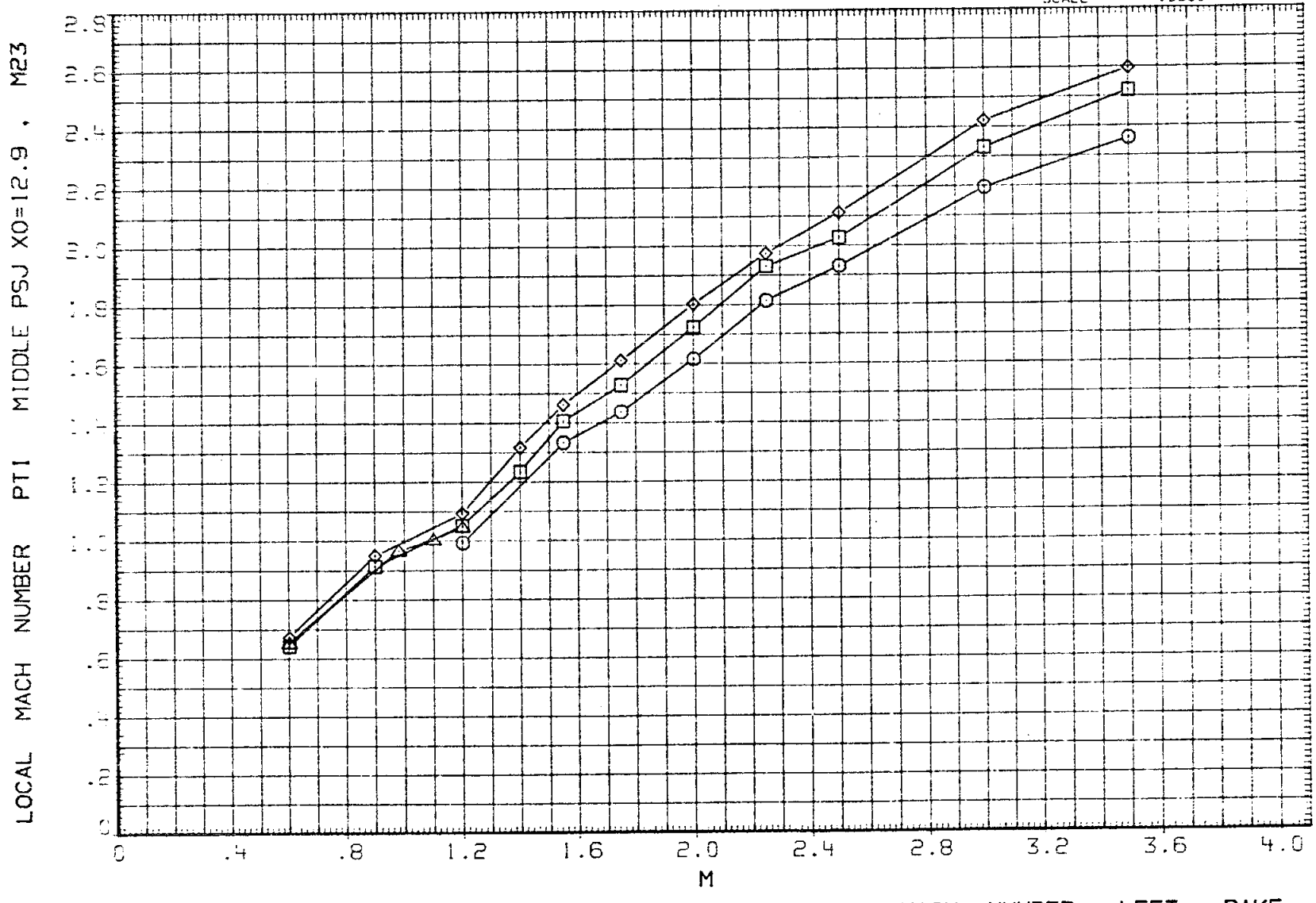


FIG. 18 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

(A) ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
[illegible]	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
[illegible]	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
[illegible]	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
[illegible]	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6900	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

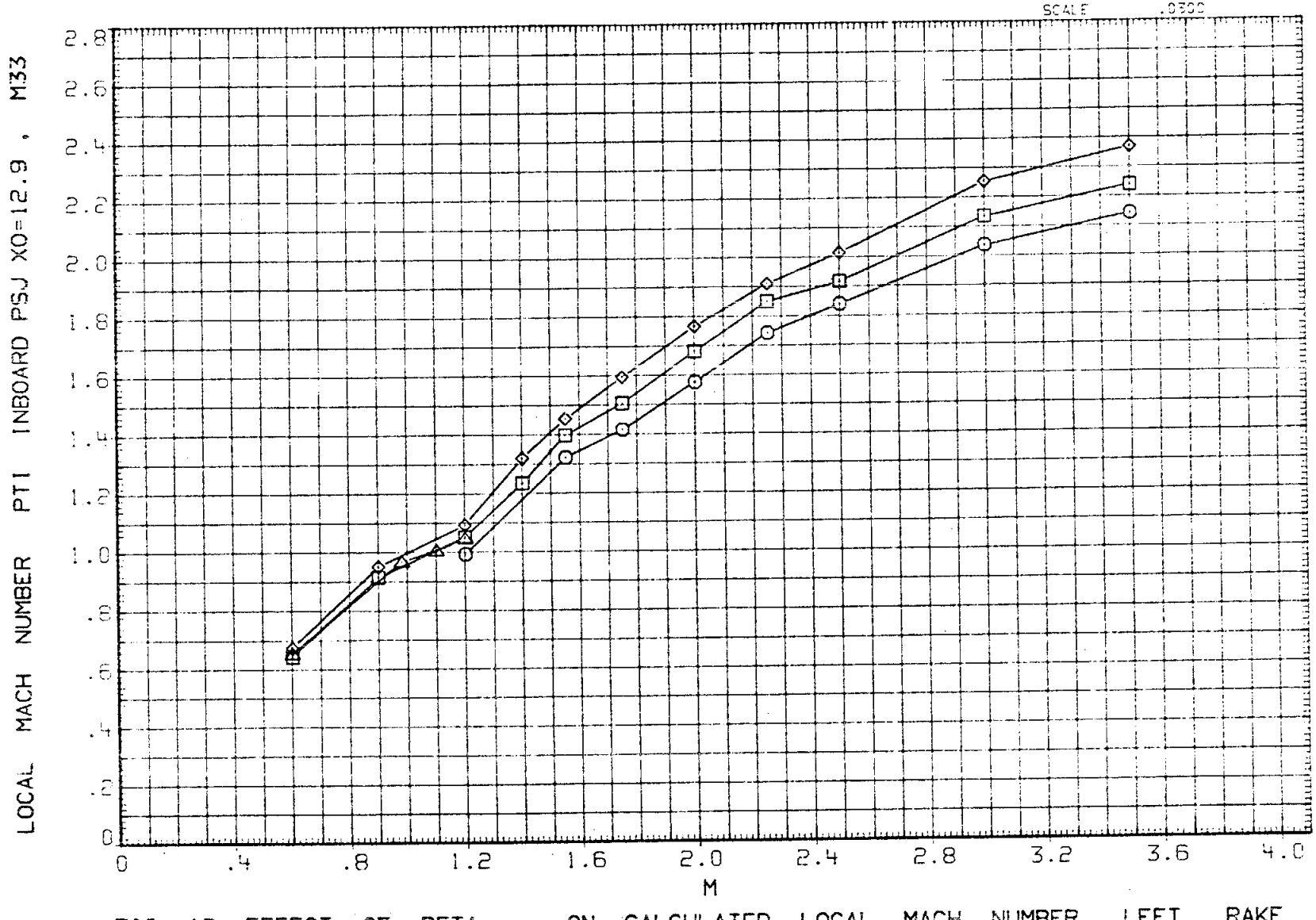


FIG. 18 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

(A) ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
EE7X03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE7X05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EE7X07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE7X01	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

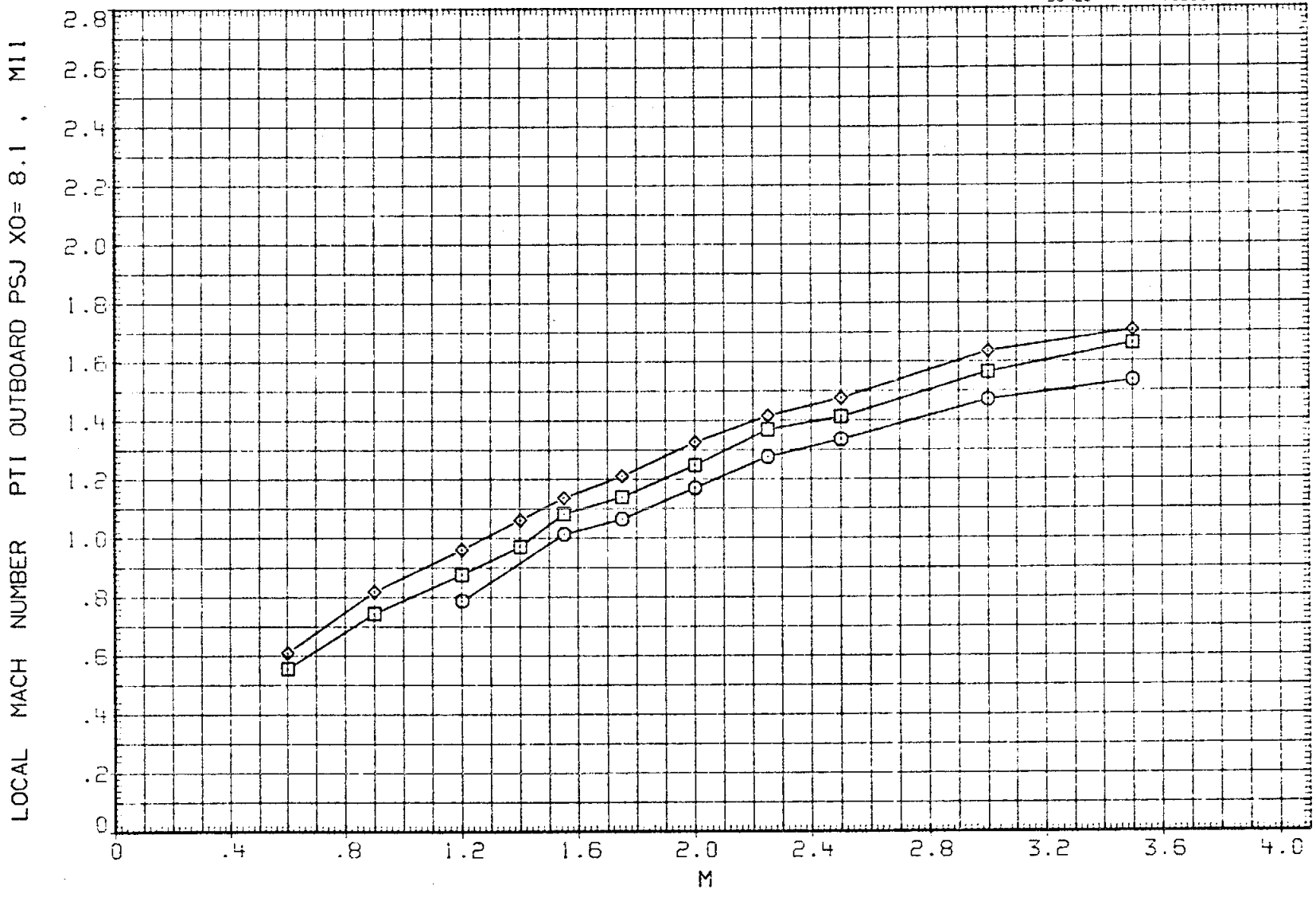


FIG. 18 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

(B) ALPHA = 6.00

DATA SET	SYMBOL	CONFIGURATION
EE7X03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES
EE7X05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES
EE7X07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES
EE7X01	△	DATA NOT AVAILABLE

BETA	ELEVON	AILRON	BDFLAP
-5.000	.000	.000	-7.170
.000	.000	.000	-7.170
5.000	.000	.000	-7.170
.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	336.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

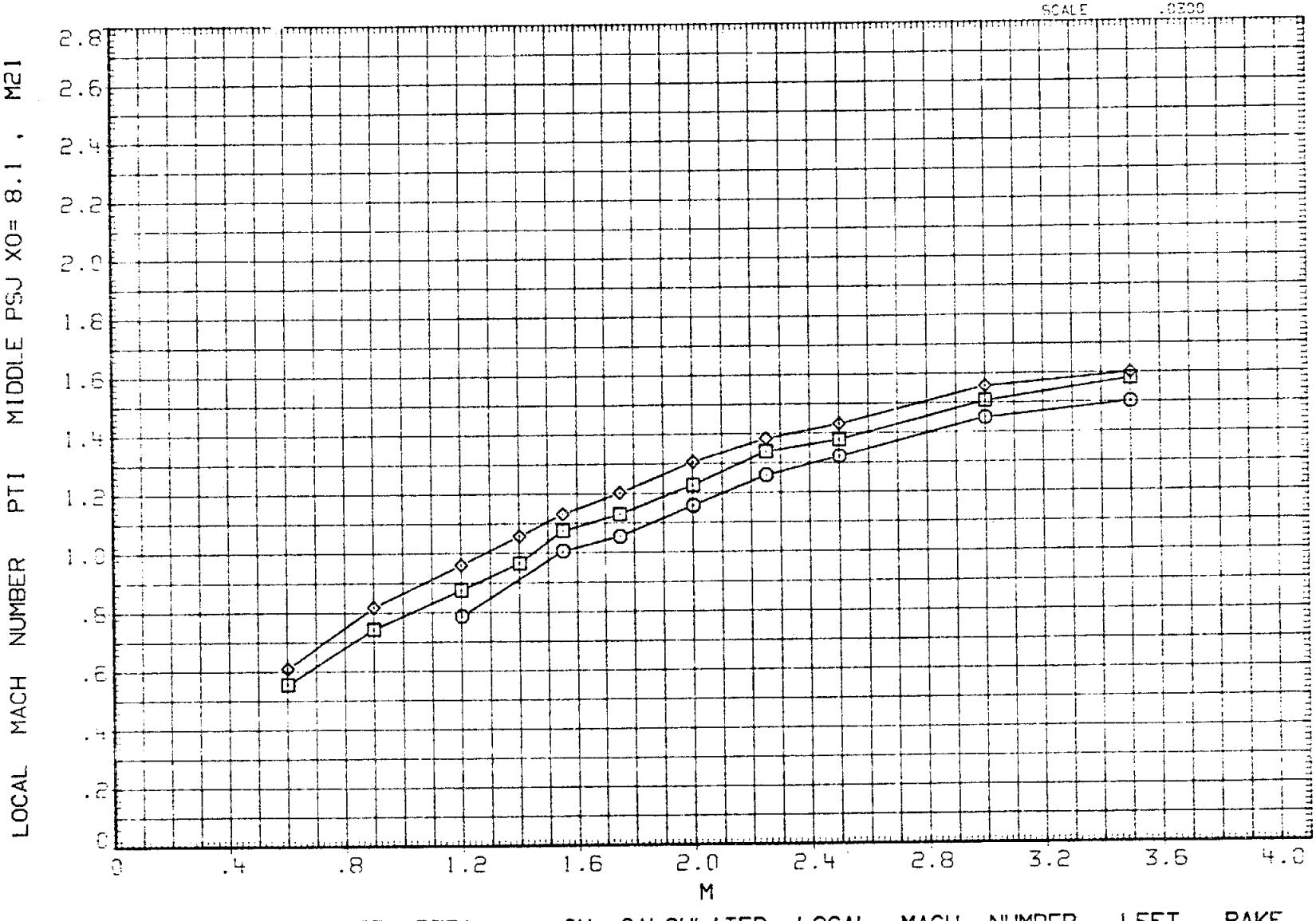


FIG. 18 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

(B)ALPHA = 6.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
EE7X03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE7X05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EE7X07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE7X01	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

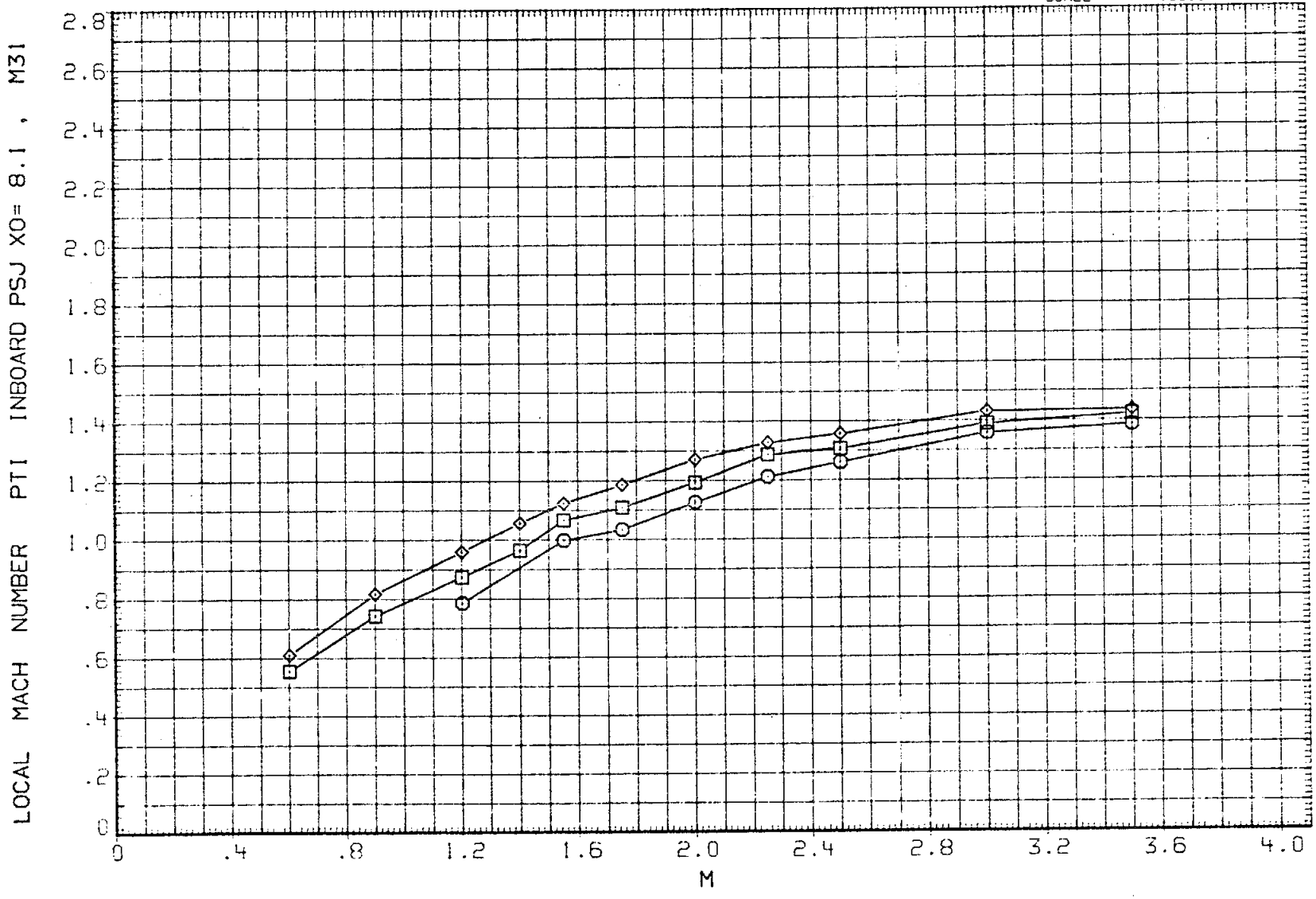


FIG. 18 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

(B)ALPHA = 6.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
EE2X03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE2X05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EE2X07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE2X01	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.5800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

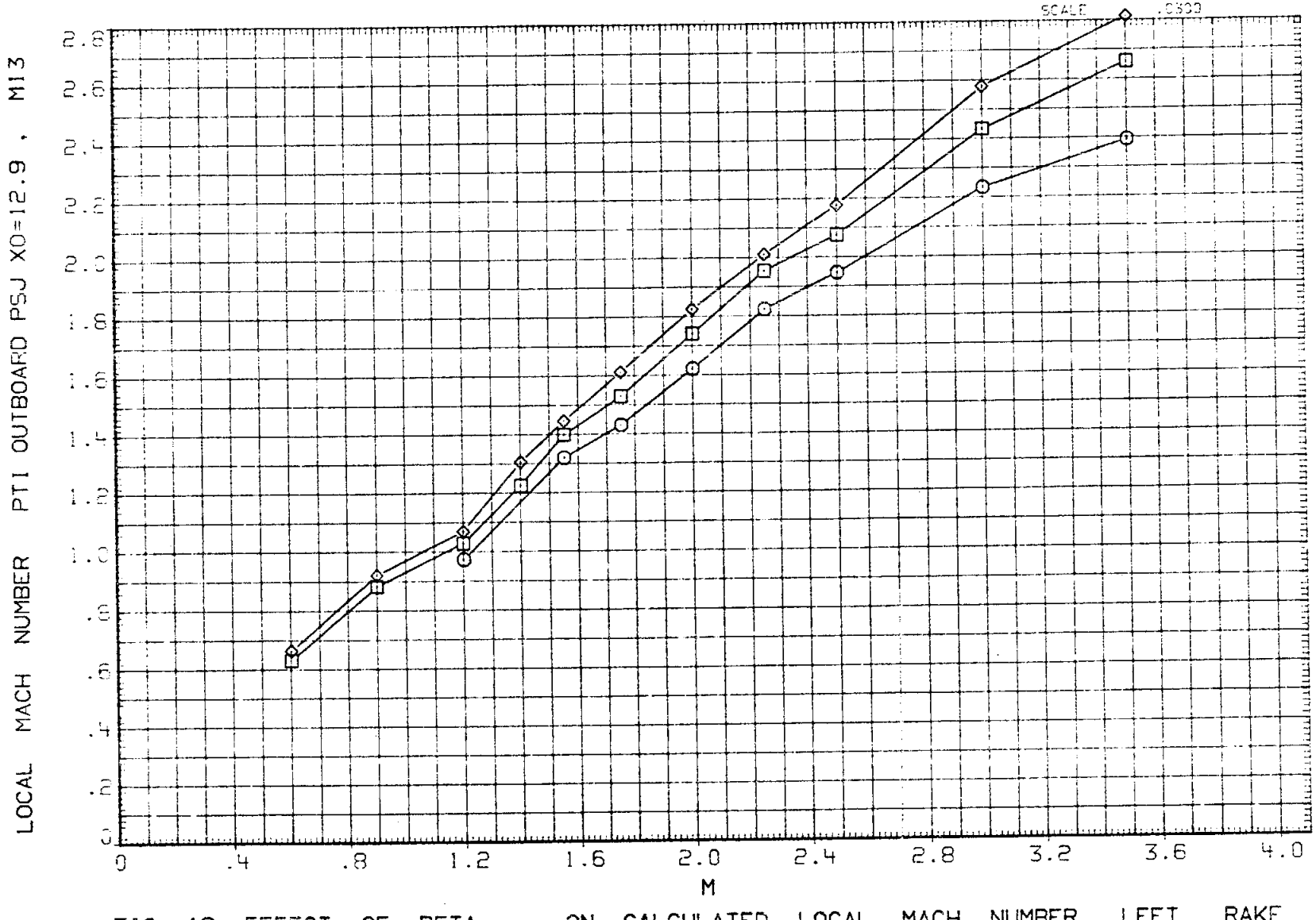


FIG. 18 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

(B)ALPHA = 6.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
EE7X03	○	ARC 11-97-87-094 0A161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE7X05	□	ARC 11-97-87-094 0A161 ORBITER + RAKES	.000	.000	.000	-7.170
EE7X07	◇	ARC 11-97-87-094 0A161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE7X01	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

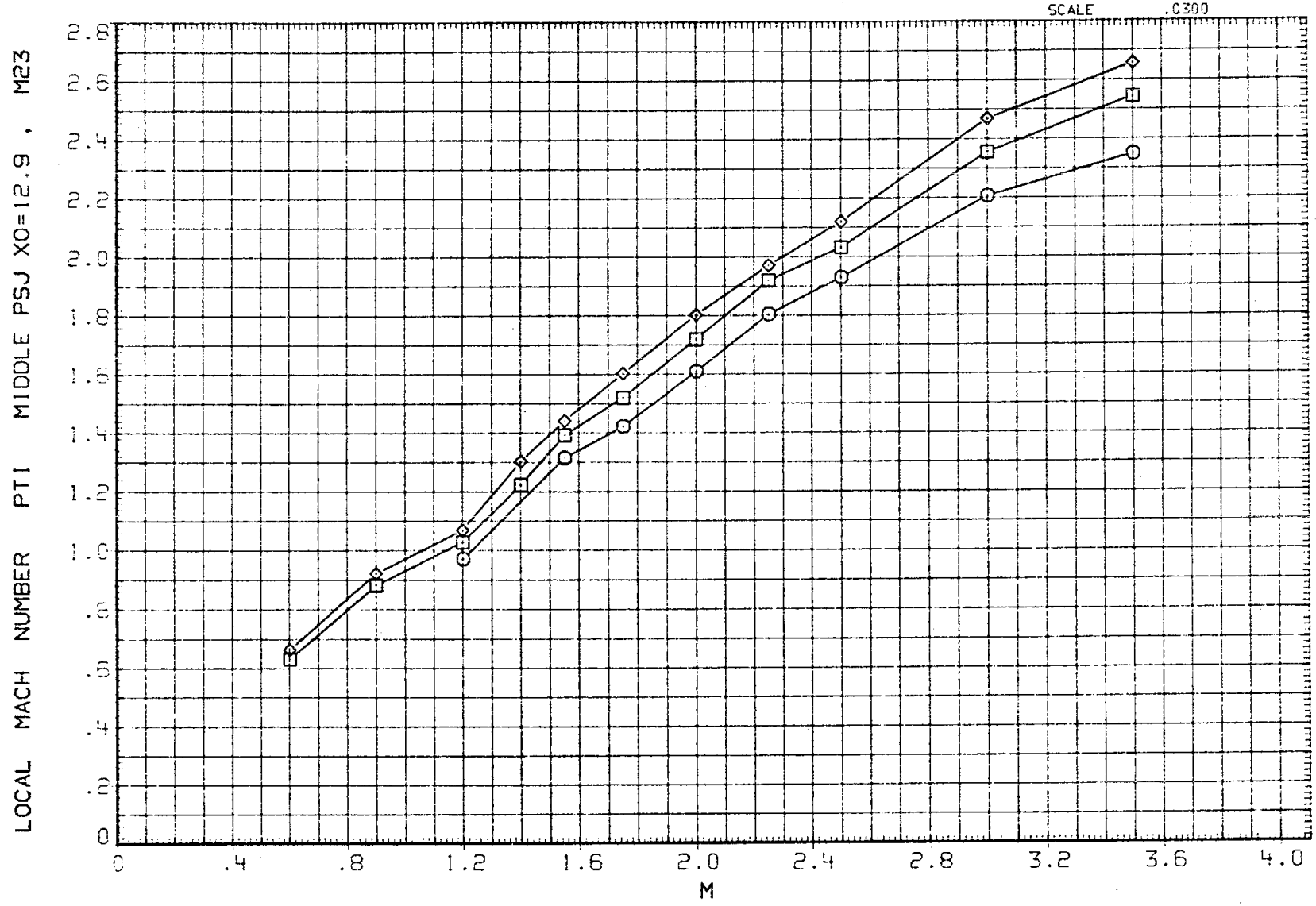


FIG. 18 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

(B)ALPHA = 6.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BODFLAP
EE7X03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE7X05	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EE7X07	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE7X01	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

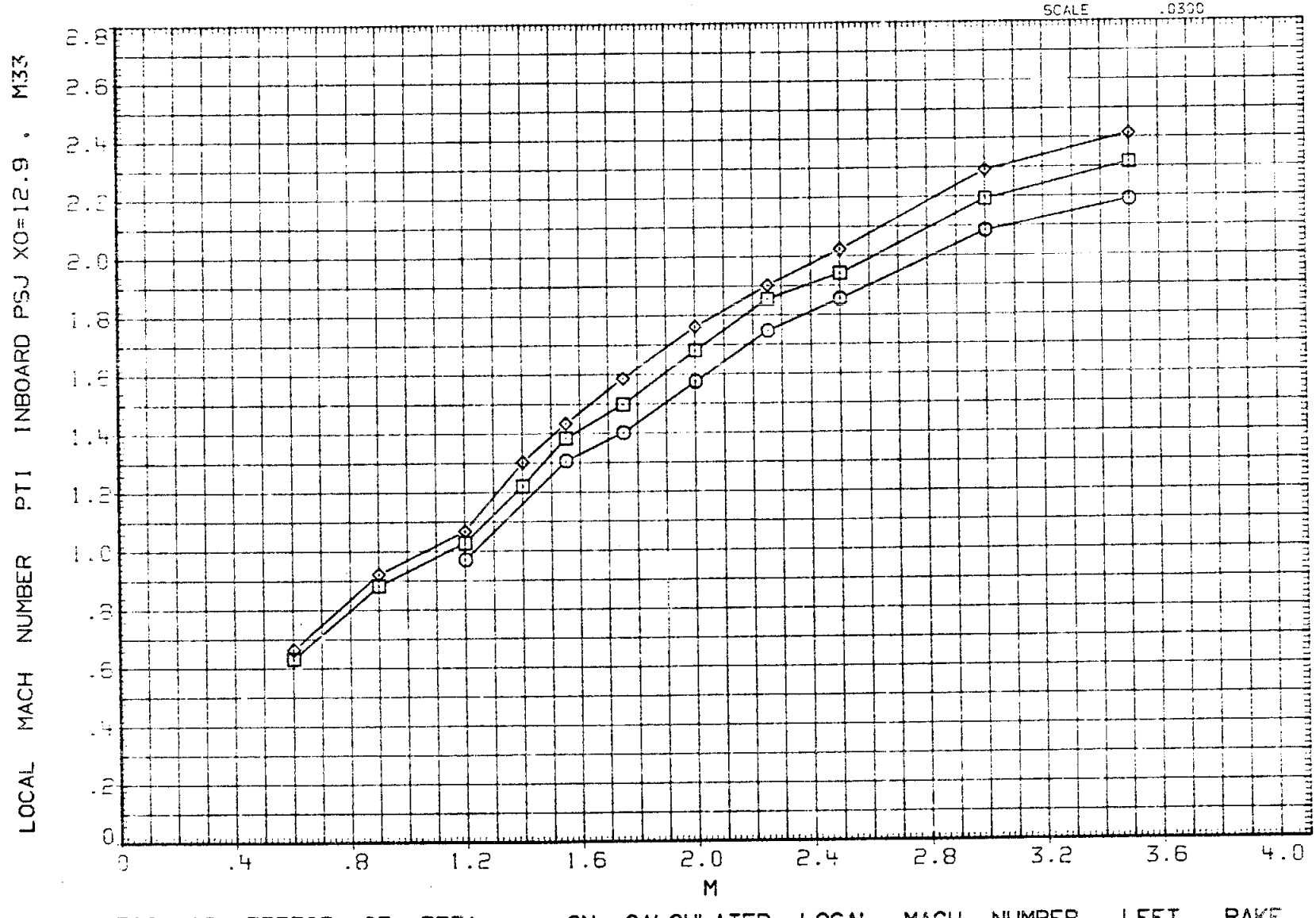


FIG. 18 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

(B)ALPHA = 6.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
EE7X03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE7X05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EE7X07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE7X01	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

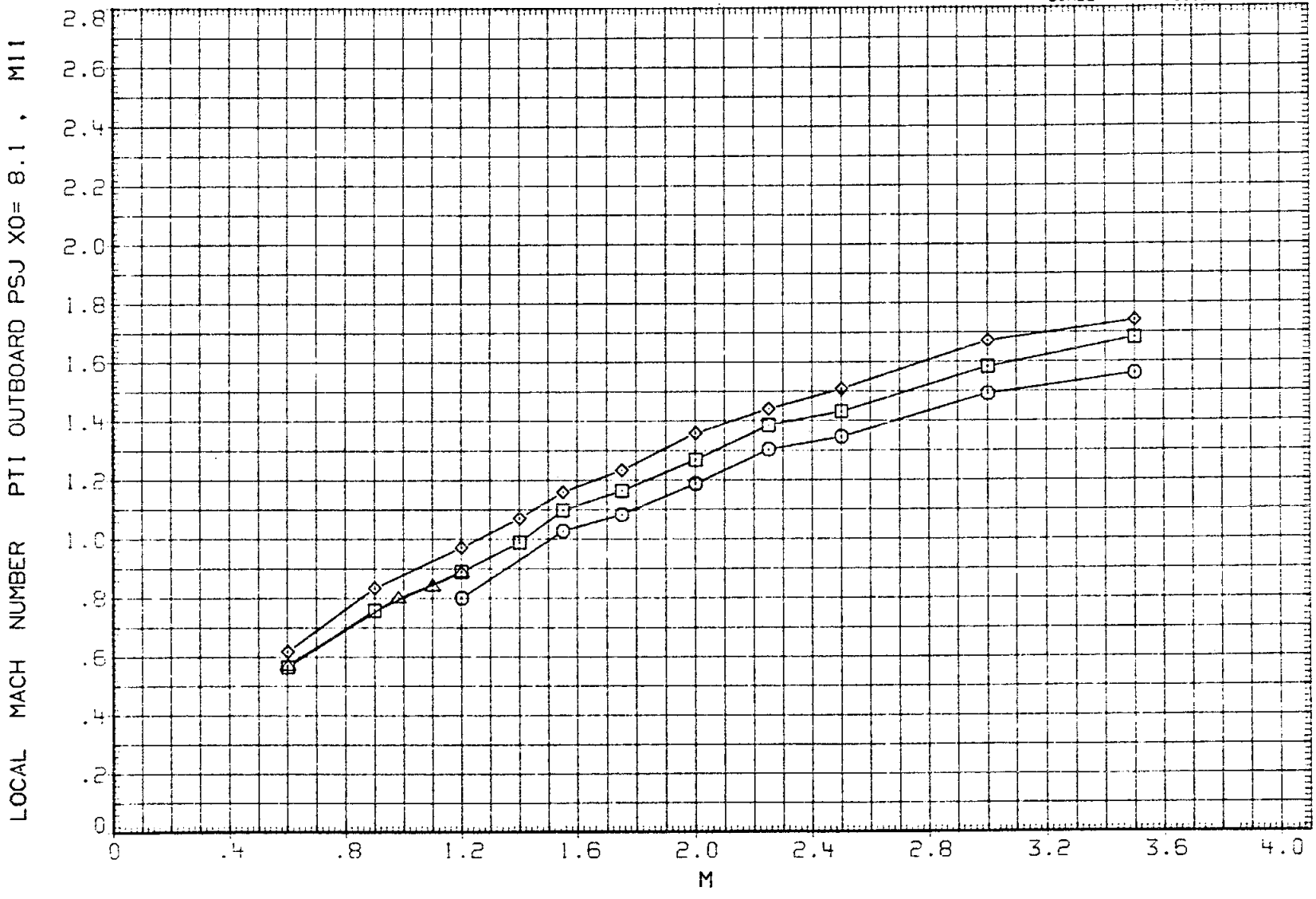


FIG. 18 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

(C)ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
FE7X03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7X05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7X07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
LE7X01	△	ARC 11-97-87-094 OA161 ORBITER + WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

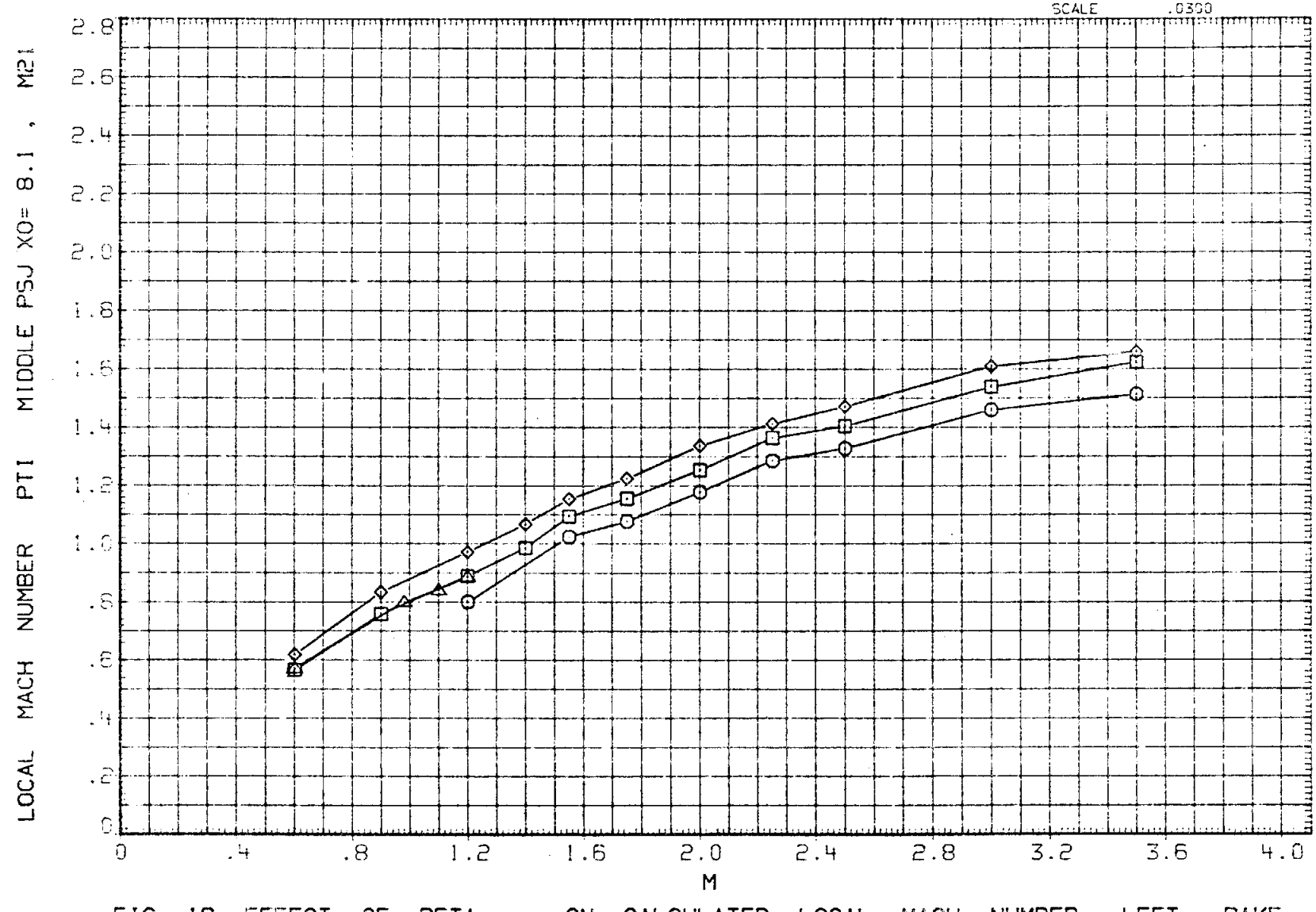


FIG. 18 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

(C)ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
EE7X03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE7X05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EE7X07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE7X01	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

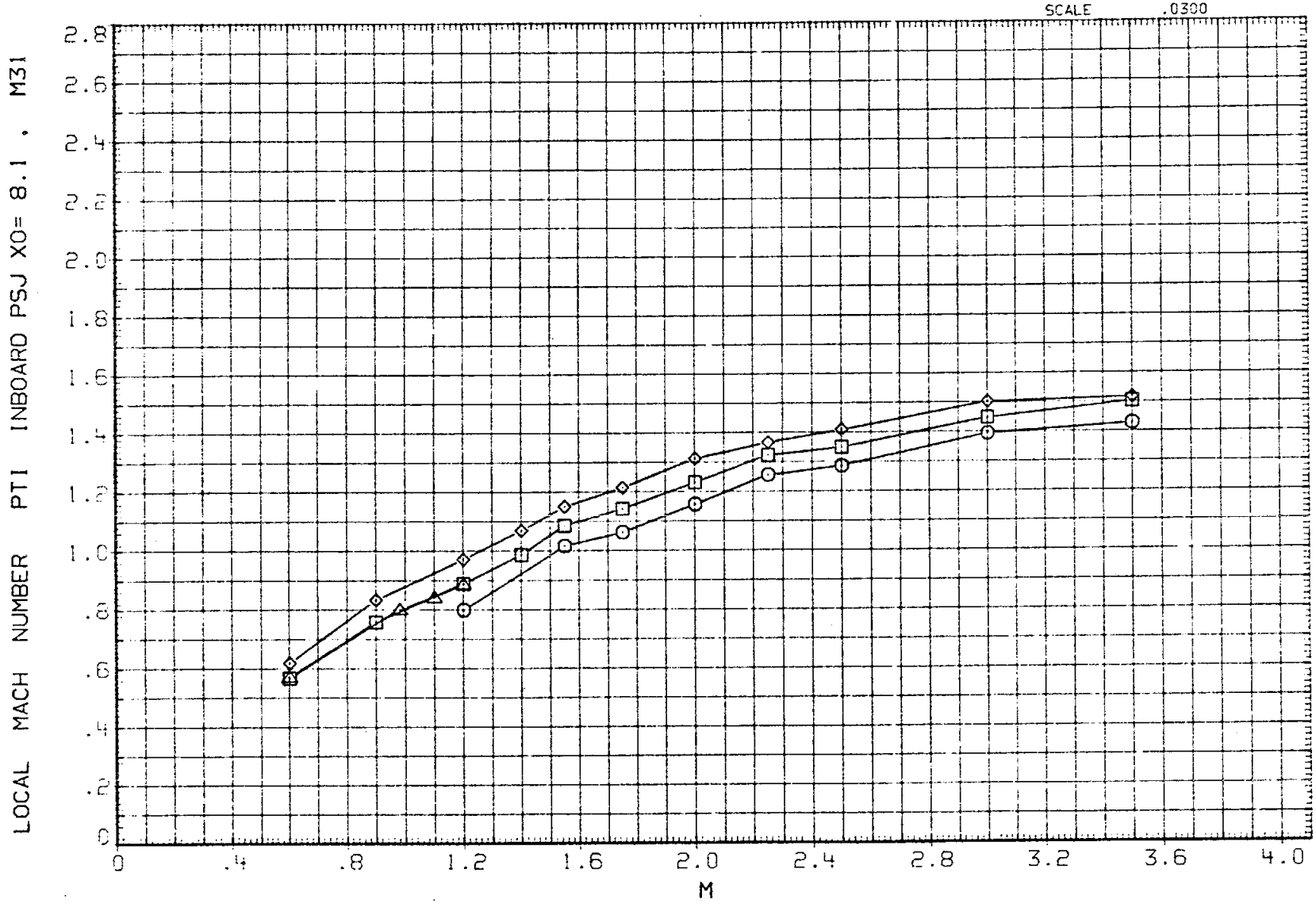


FIG. 18 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

(C)ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
[illegible]	○	ARC 11-97-87-094 0A161 ORBITER + RAKES	-5.000	.000	.000	-7.170
[illegible]	□	ARC 11-97-87-094 0A161 ORBITER + RAKES	.000	.000	.000	-7.170
[illegible]	◇	ARC 11-97-87-094 0A161 ORBITER + RAKES	5.000	.000	.000	-7.170
[illegible]	△	ARC 11-97-87-094 0A161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

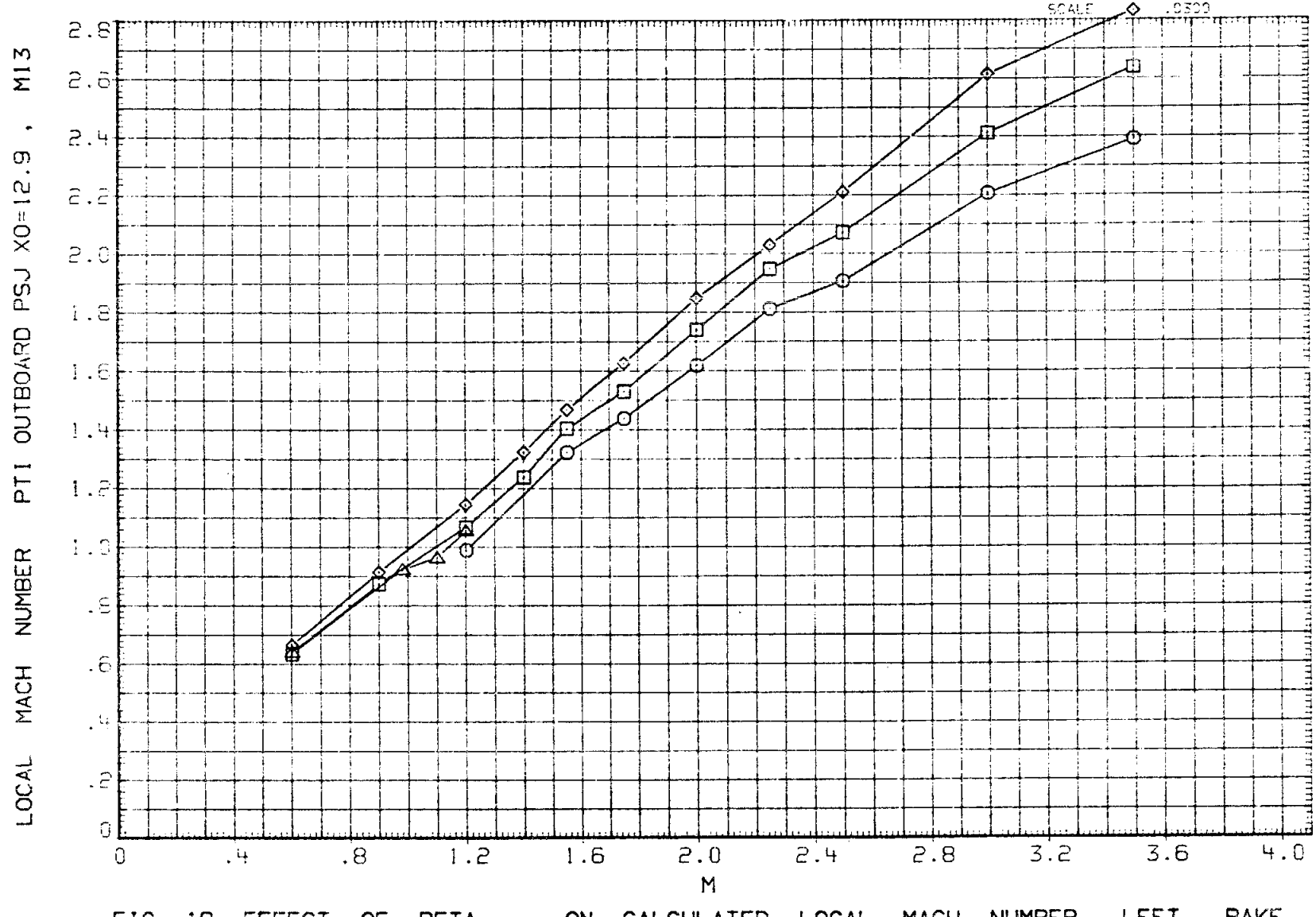


FIG. 18 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

(C)ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
EE7X03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE7X05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EE7X07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE7X01	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

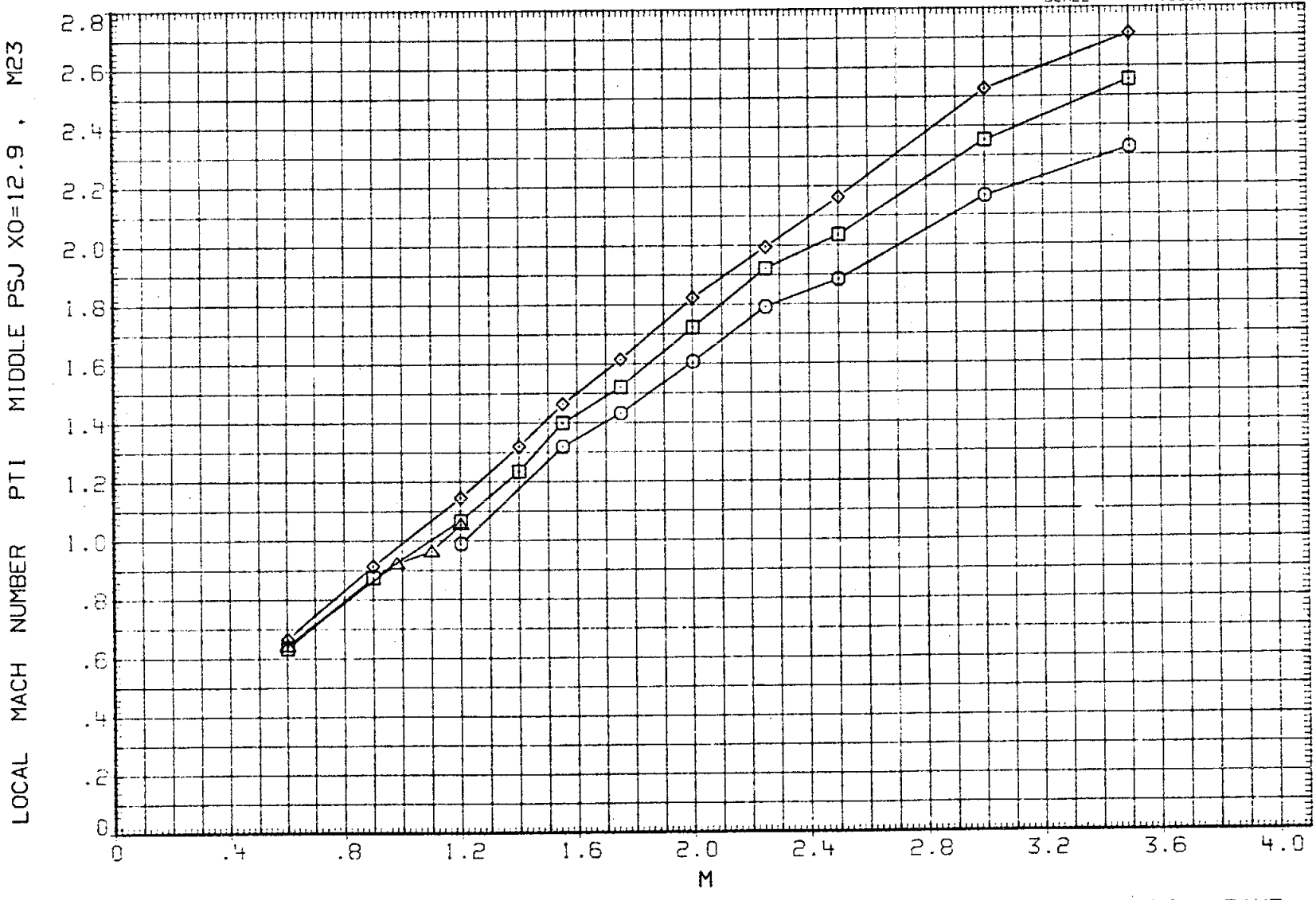


FIG. 18 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

(C)ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
EE7X03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE7X05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EE7X07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE7X01	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
SREF	8690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

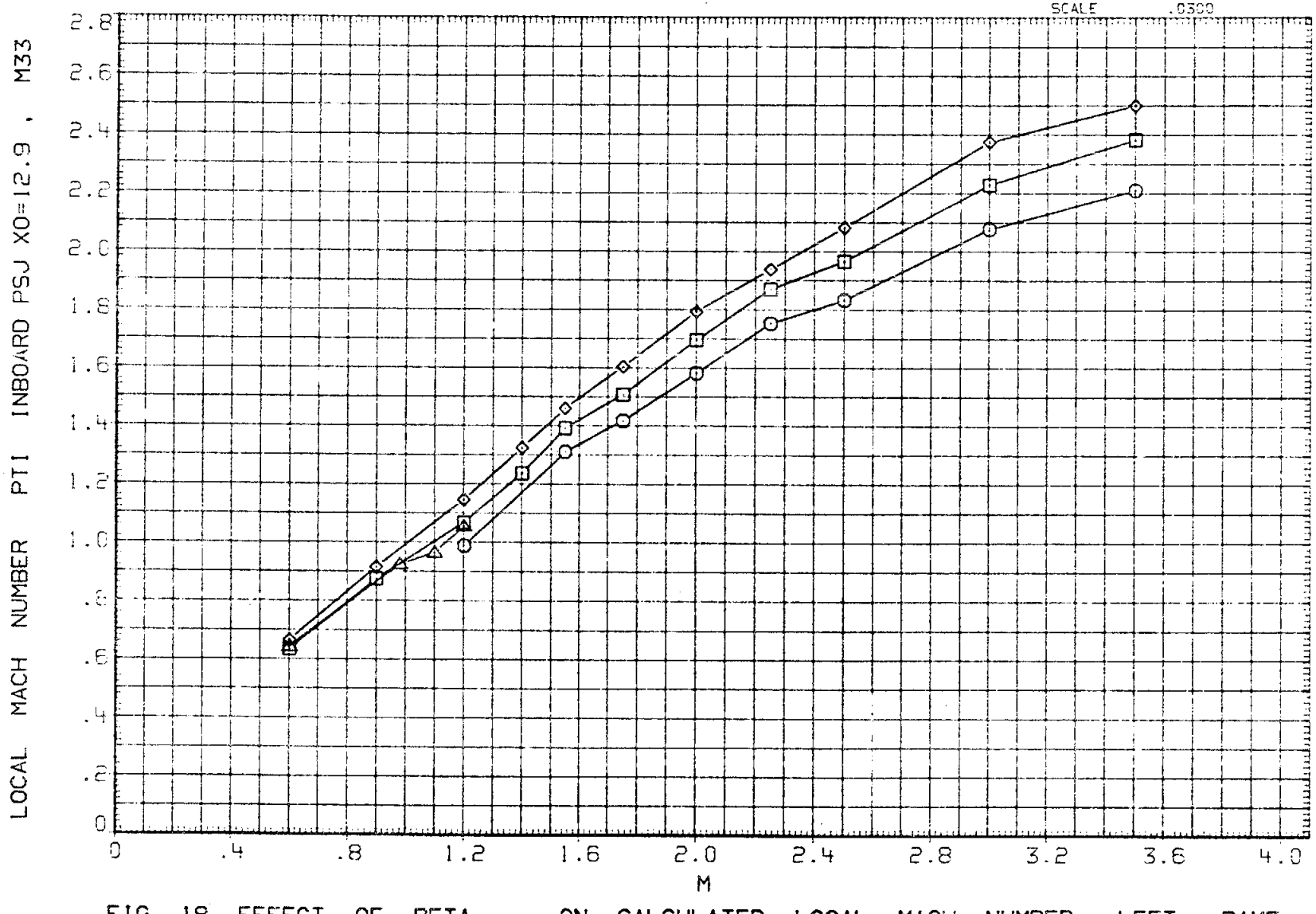


FIG. 18 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

(C)ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
EE7X03	○	ARC 11-97-87-094 0A161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE7X05	□	ARC 11-97-87-094 0A161 ORBITER + RAKES	.000	.000	.000	-7.170
EE7X07	◇	ARC 11-97-87-094 0A161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE7X01	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

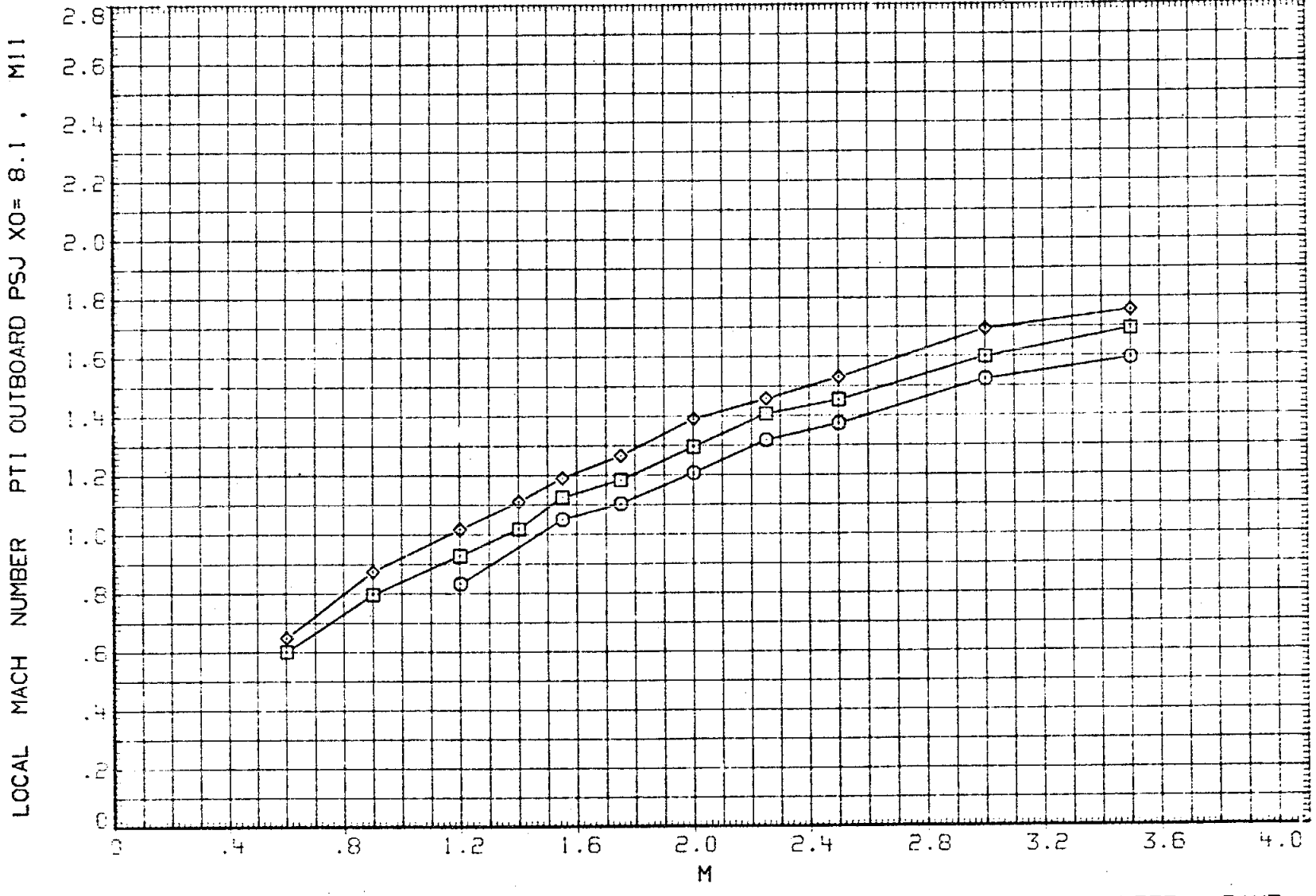


FIG. 18 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

(D)ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
E07N02	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
E07N03	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
E07N01	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
E07N01	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

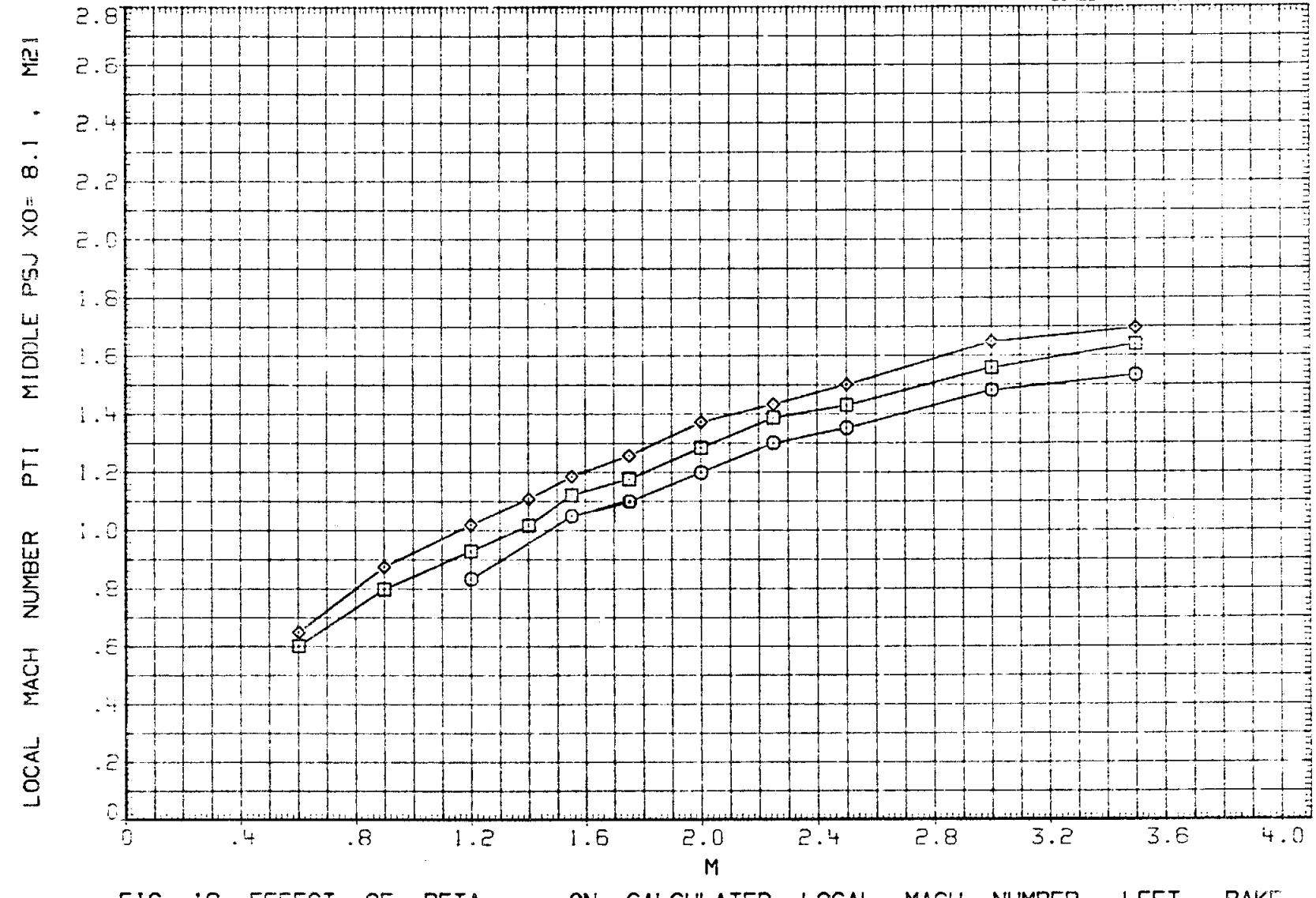


FIG. 18 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

(D)ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
EE7X03	○	ARC 11-97-87-094 0A161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE7X05	□	ARC 11-97-87-094 0A161 ORBITER + RAKES	.000	.000	.000	-7.170
EE7X07	◇	ARC 11-97-87-094 0A161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE7X01	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

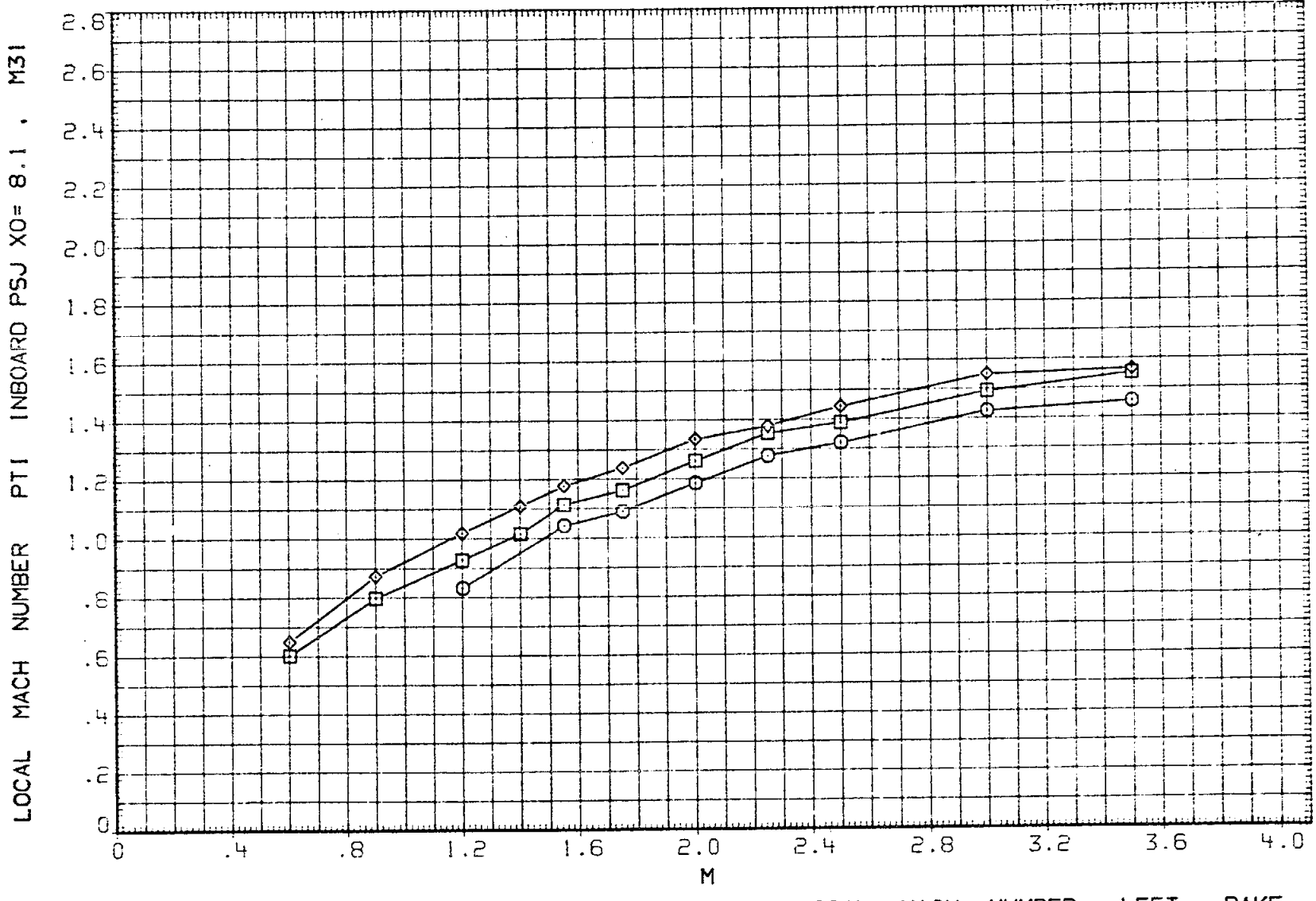


FIG. 18 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

(D)ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	RDFLAP
EE7X03	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE7X05	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EE7X07	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE7X01	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6600	IN.
XMRP	1076.6920	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

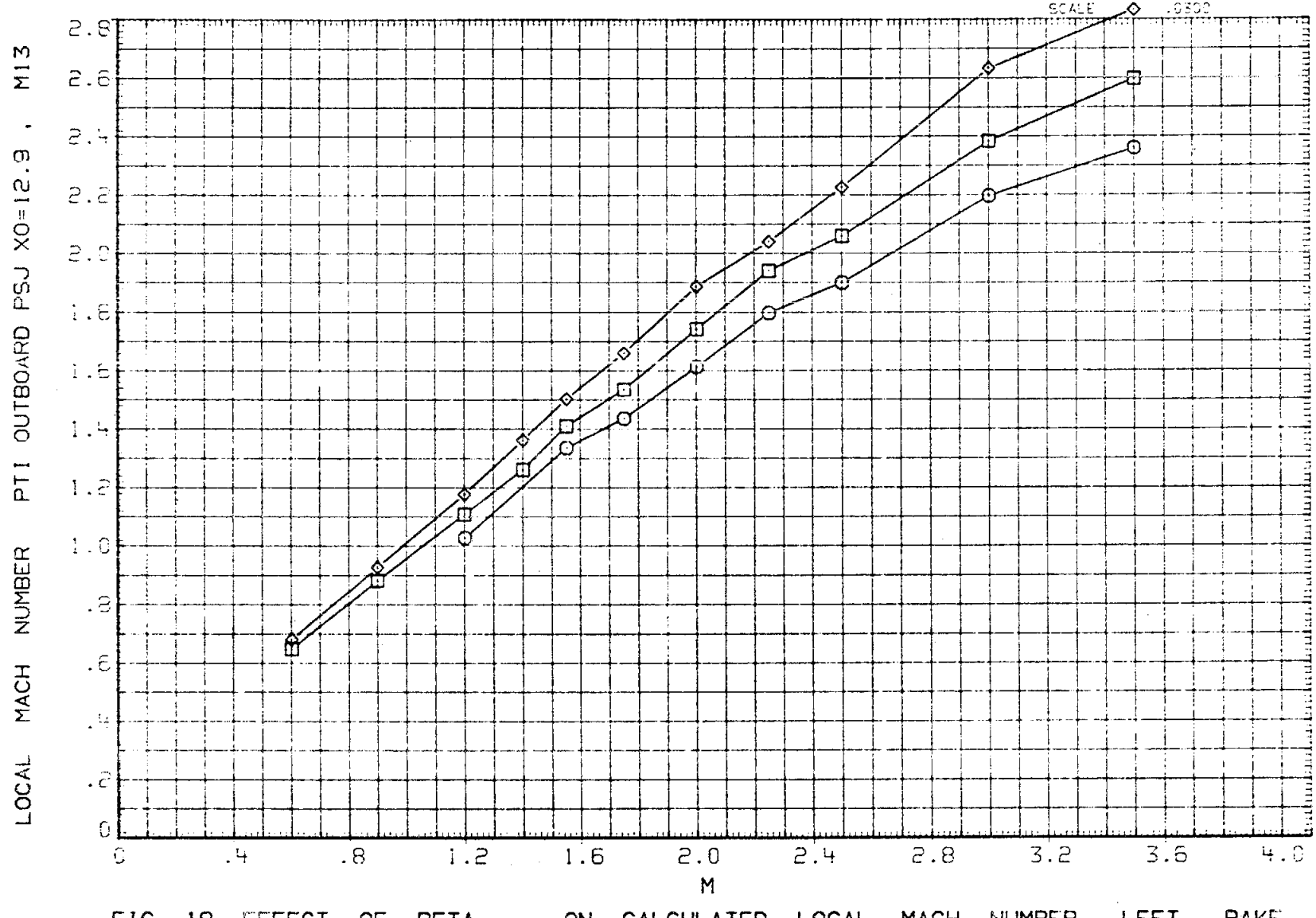


FIG. 18 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

(D)ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION
EE7X03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES
EE7X05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES
EE7X07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES
EE7X01	△	DATA NOT AVAILABLE

BETA	ELEVON	AILRON	BDFLAP
-5.000	.000	.000	-7.170
.000	.000	.000	-7.170
5.000	.000	.000	-7.170
.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

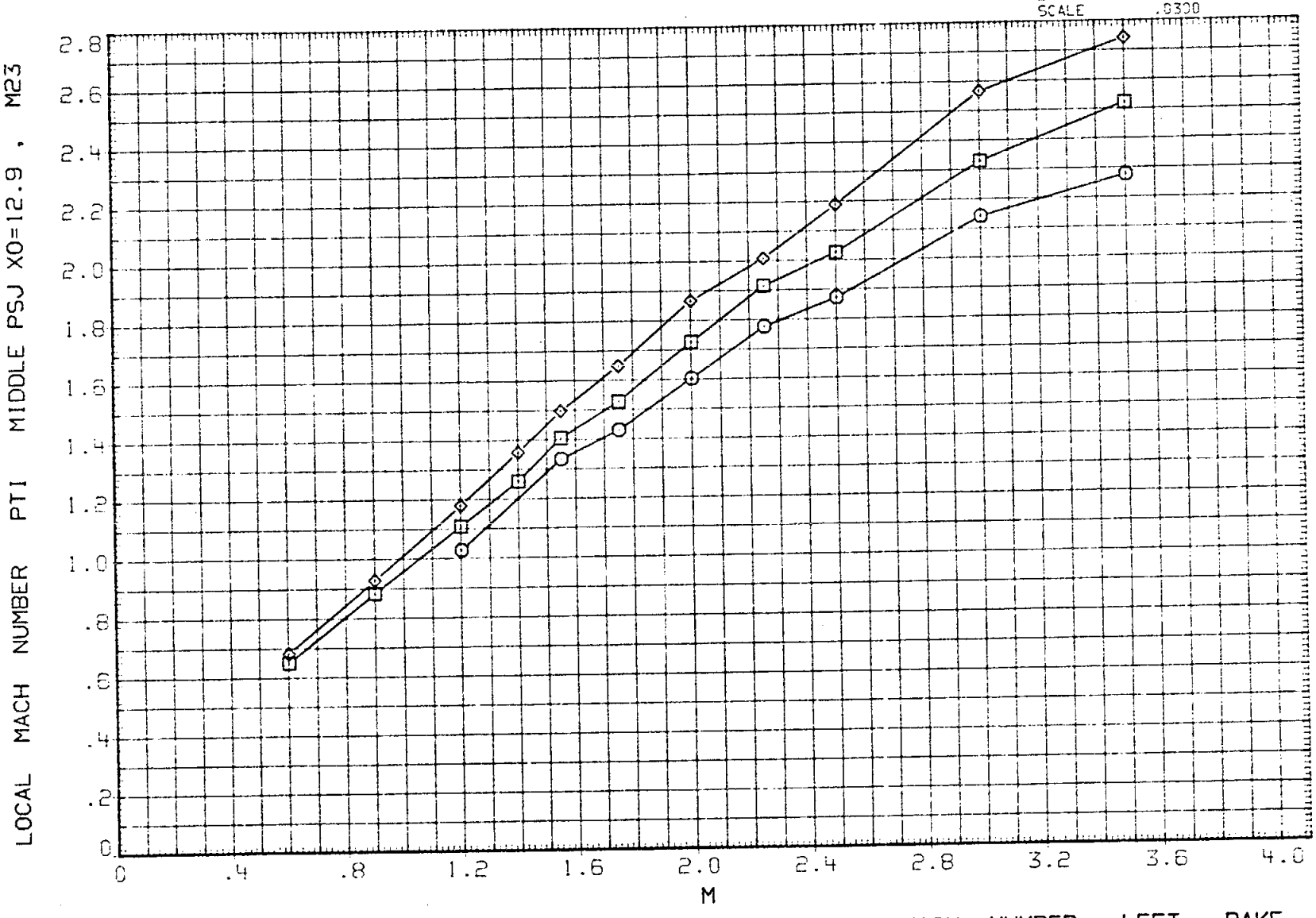


FIG. 18 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

(D) ALPHA = 18.00

DATA SET SYMBOL		CONFIGURATION	BETA	ELEVON	AILRON	RUDLAT
EE7X03	(D)(C)	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.177
EE7X05		ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EE7X07	(A)	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE7X01		DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

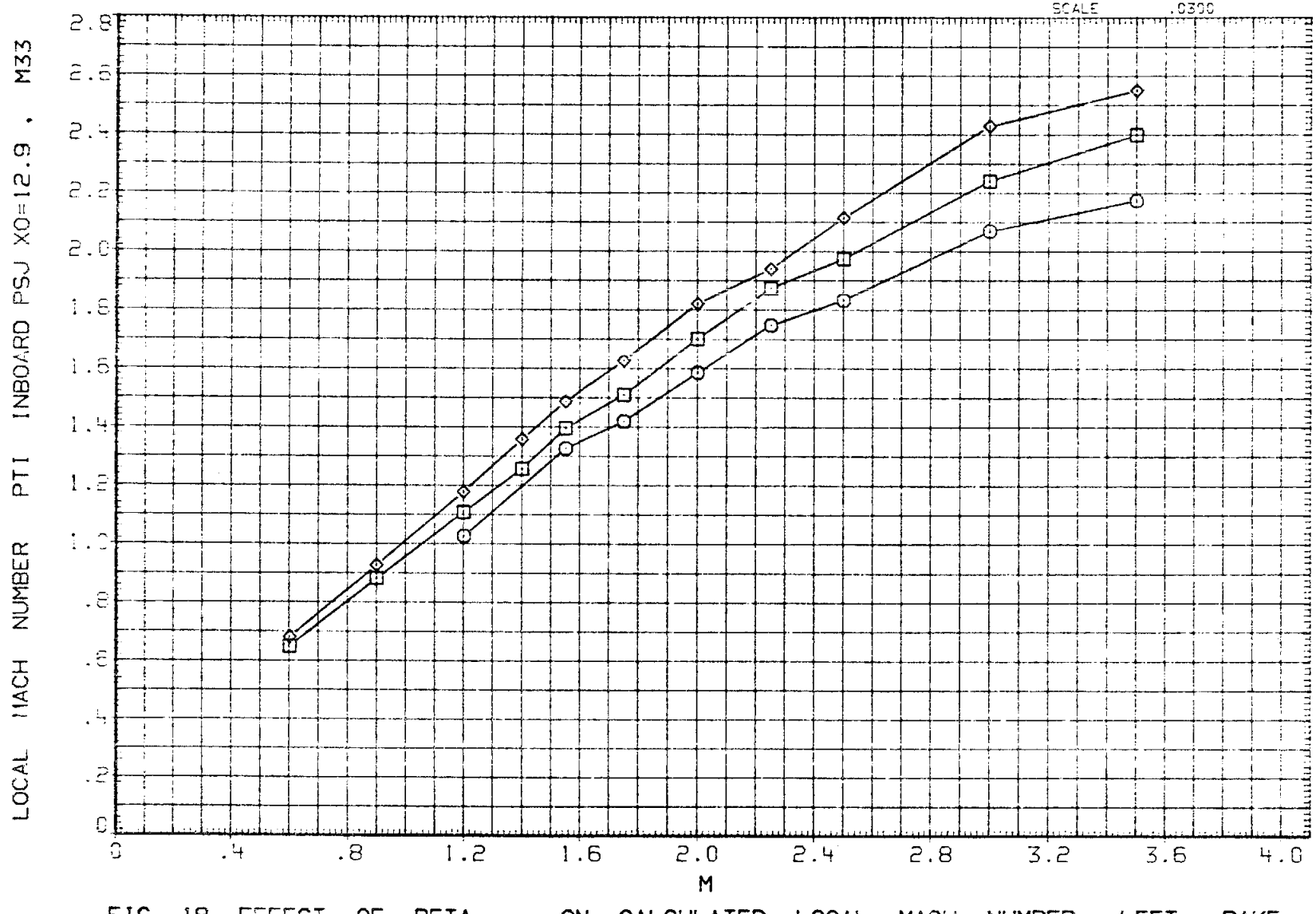


FIG. 18 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER . LEFT RAKE

(D)ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
EE7X03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE7X05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EE7X07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE7X01	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6600	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0500	

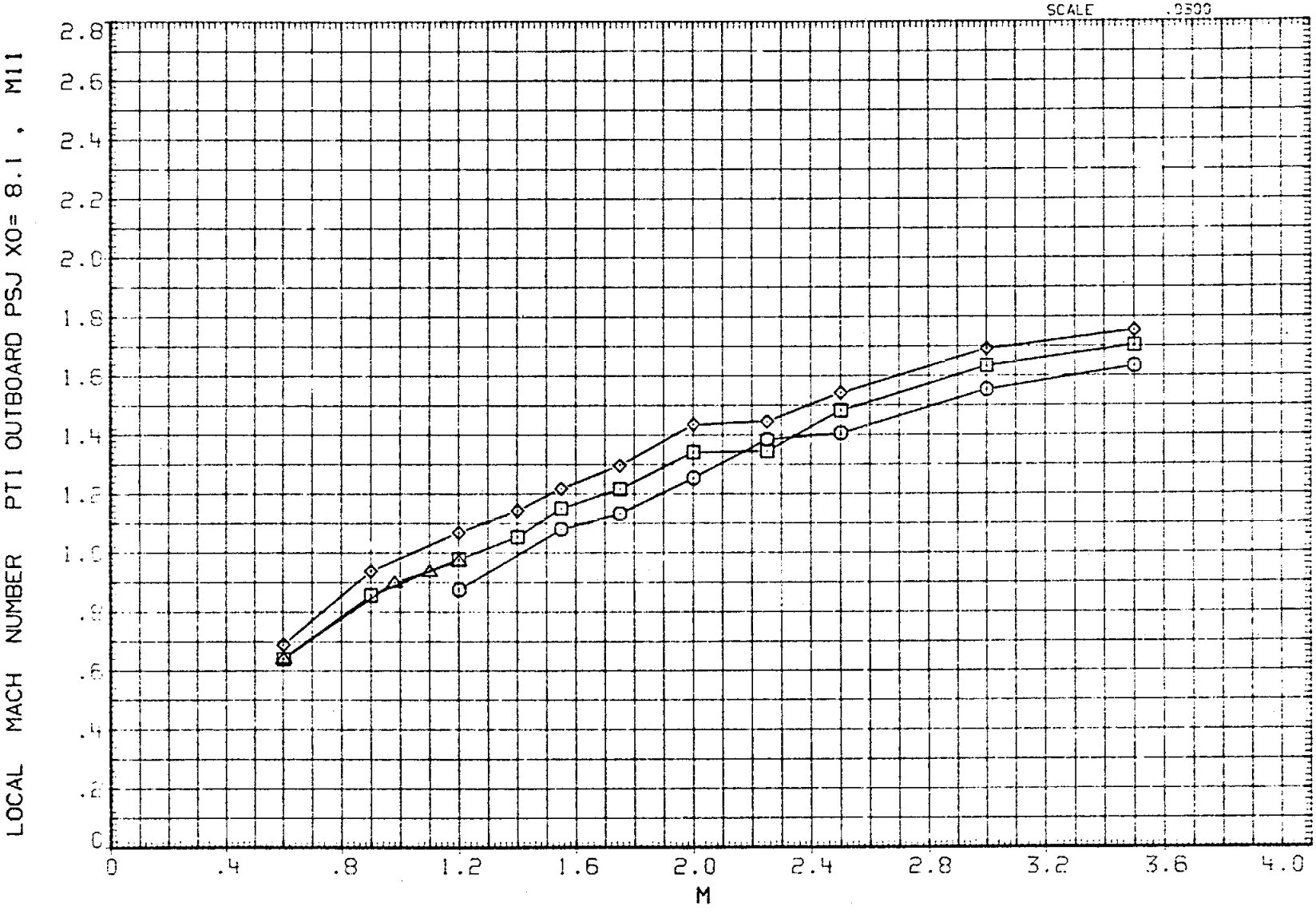


FIG. 18 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

(E)ALPHA = 24.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
EE7X08	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE7X05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EE7X07	△	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE7X01	○	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	935.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

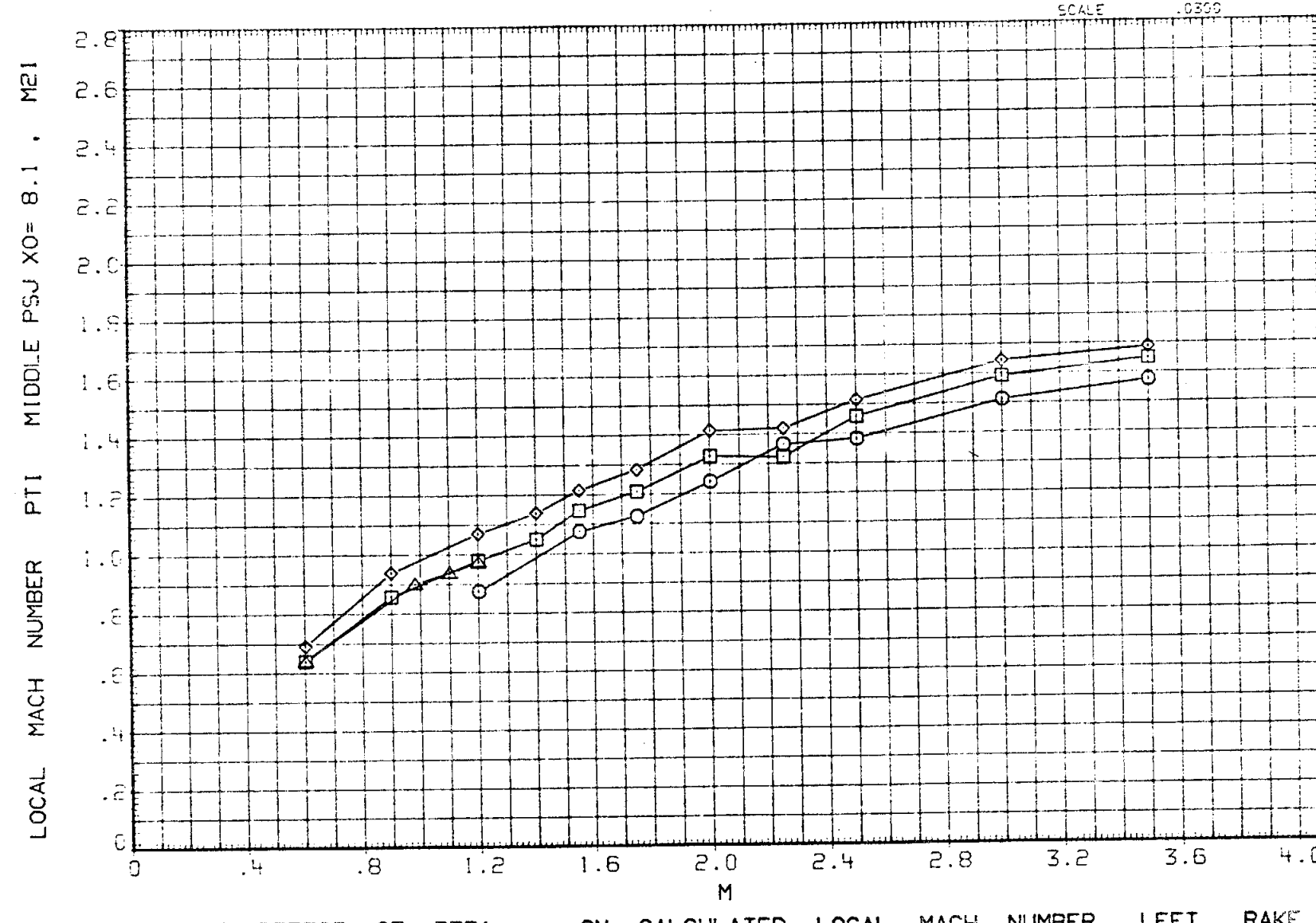


FIG. 18 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

(E)ALPHA = 24.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
EE7X03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE7X05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EE7X07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE7X01	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

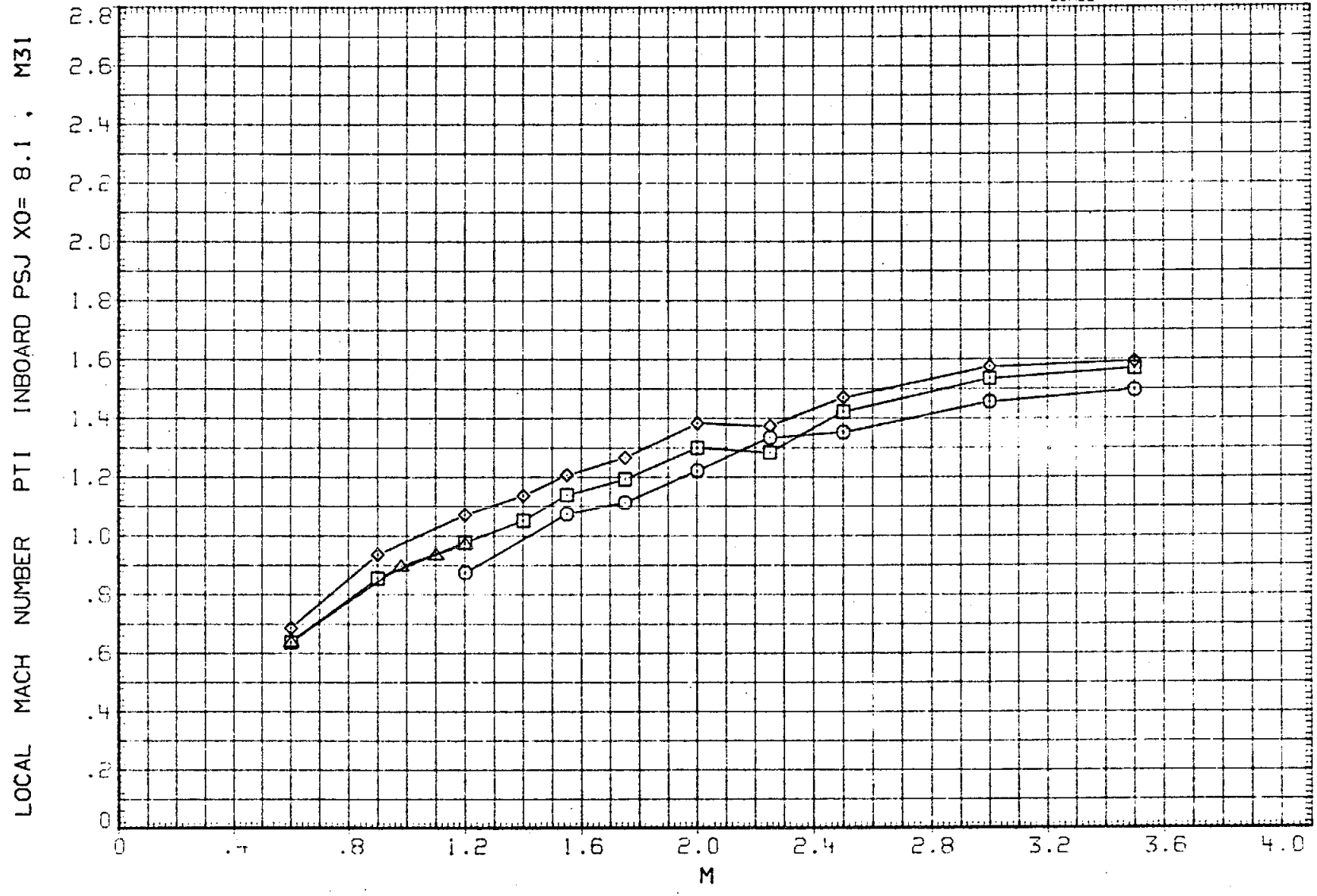


FIG. 18 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

(E)ALPHA = 24.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
E67X03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
E67X05	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
E67X07	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
E67X01	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	935.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

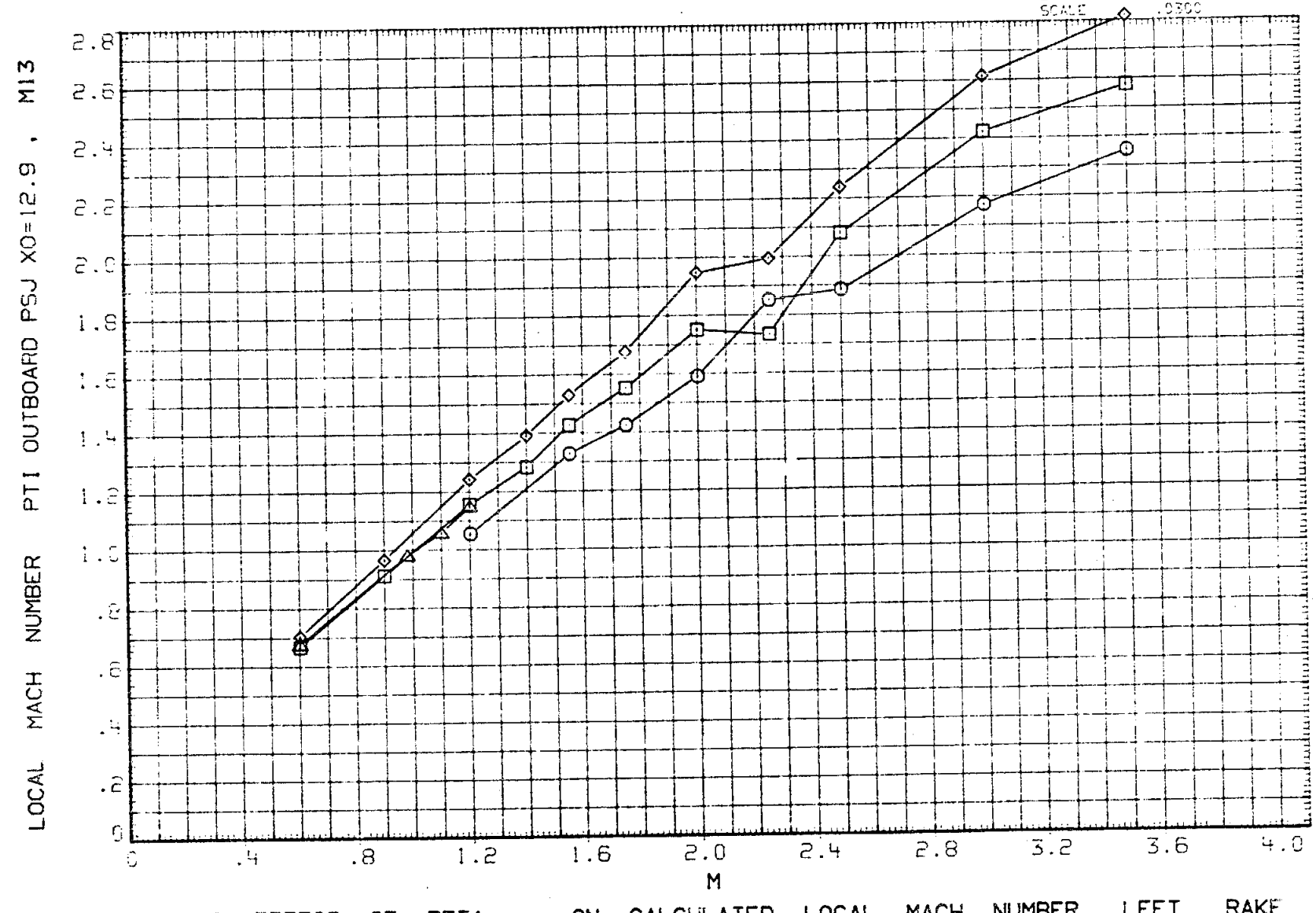


FIG. 18 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

(E)ALPHA = 24.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
EE7X03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE7X05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EE7X07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE7X01	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

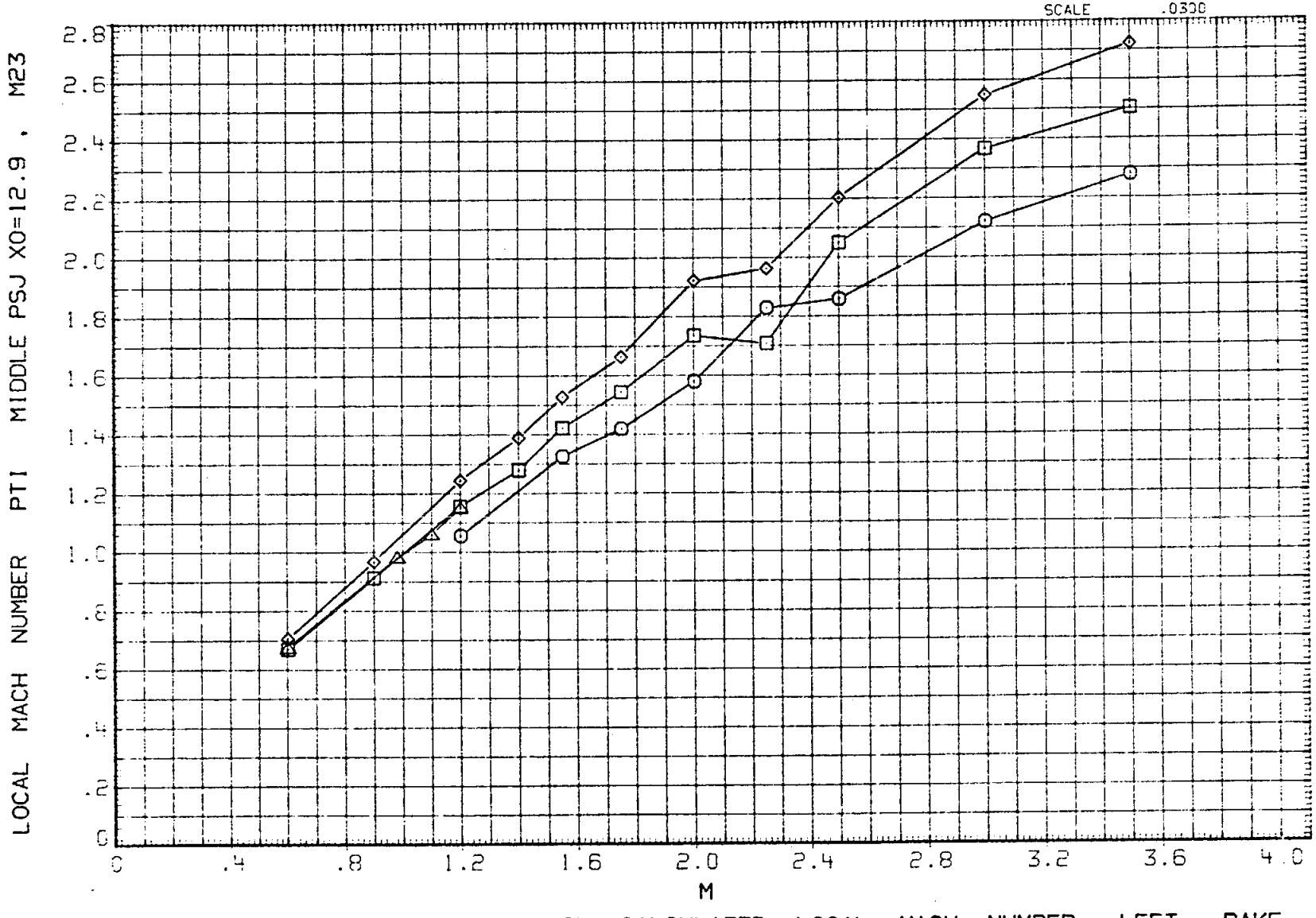


FIG. 18 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

(E)ALPHA = 24.00

DATA SET SYMBOL		CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
EETX03		ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EETX06		ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EETX07		ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EETA01	(+)PTI	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6000	IN.
XMRP	1076.6000	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

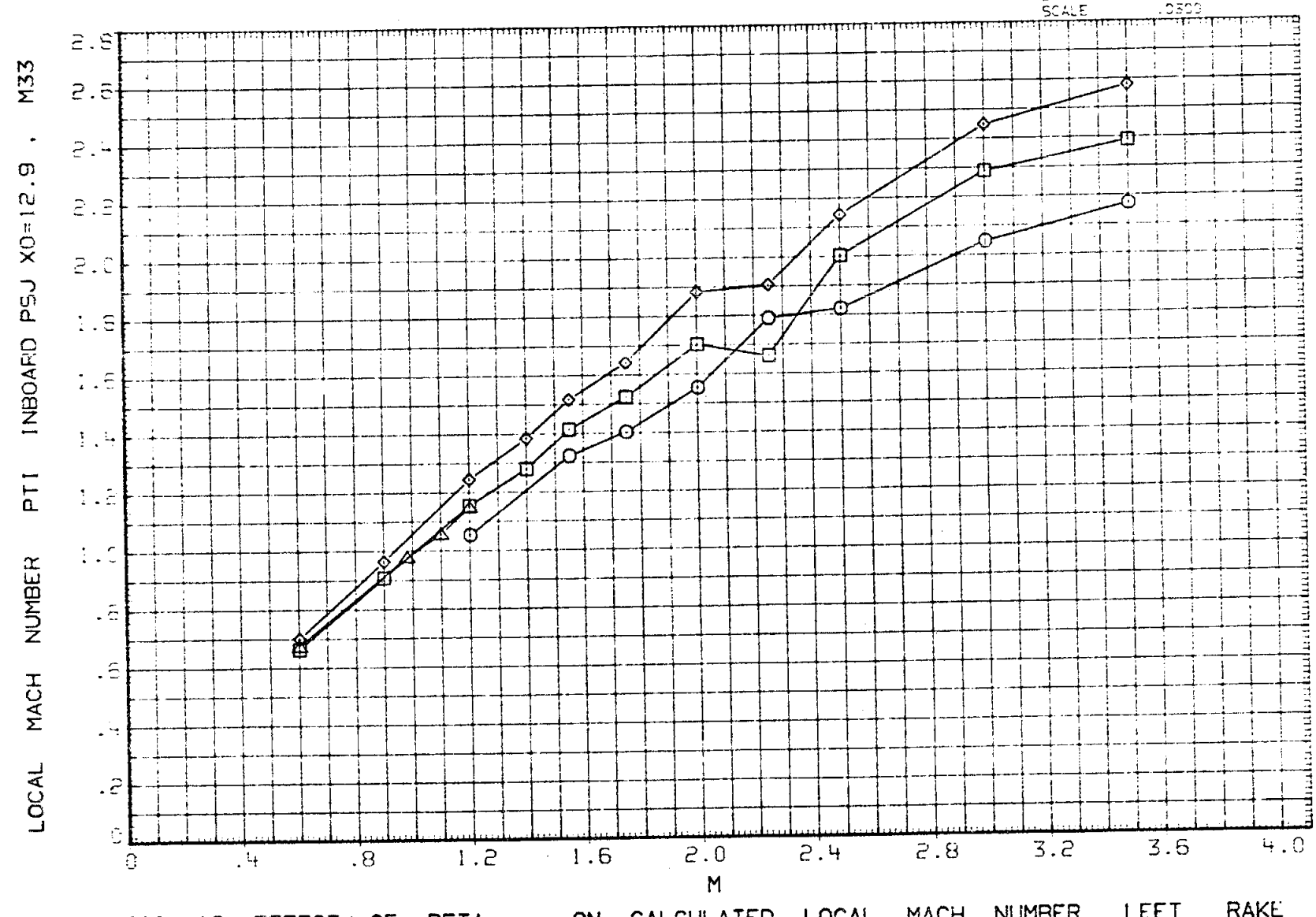


FIG. 18 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER LEFT RAKE

(E)ALPHA = 24.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
EE7B03	○	ARC 11-97-87-094 0A161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE7B05	□	ARC 11-97-87-094 0A161 ORBITER + RAKES	.000	.000	.000	-7.170
EE7B07	◇	ARC 11-97-87-094 0A161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE7B01	△	ARC 11-97-87-094 0A161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

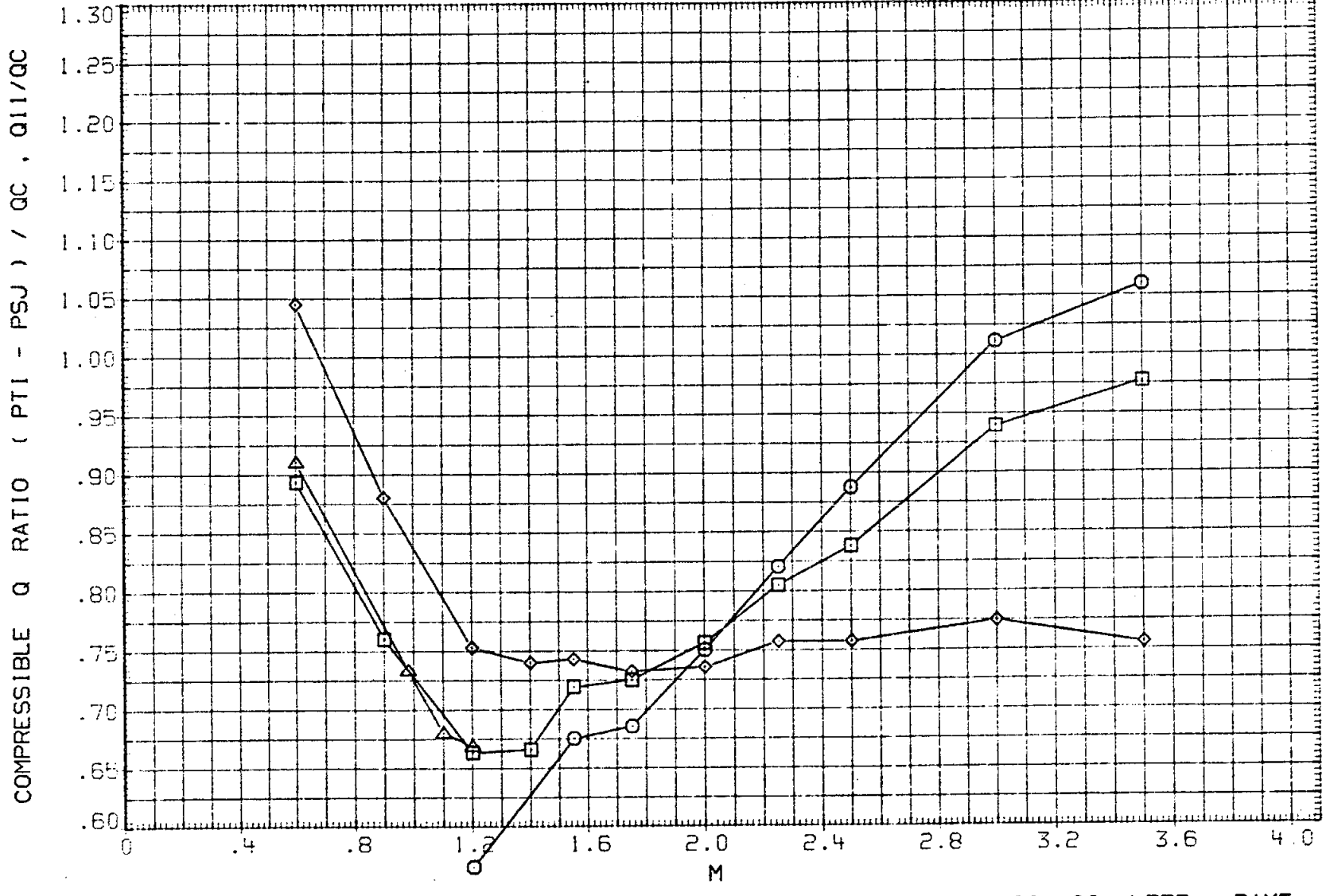


FIG. 19 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

(A) ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	RUDDER
EE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EE7807	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE7811	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

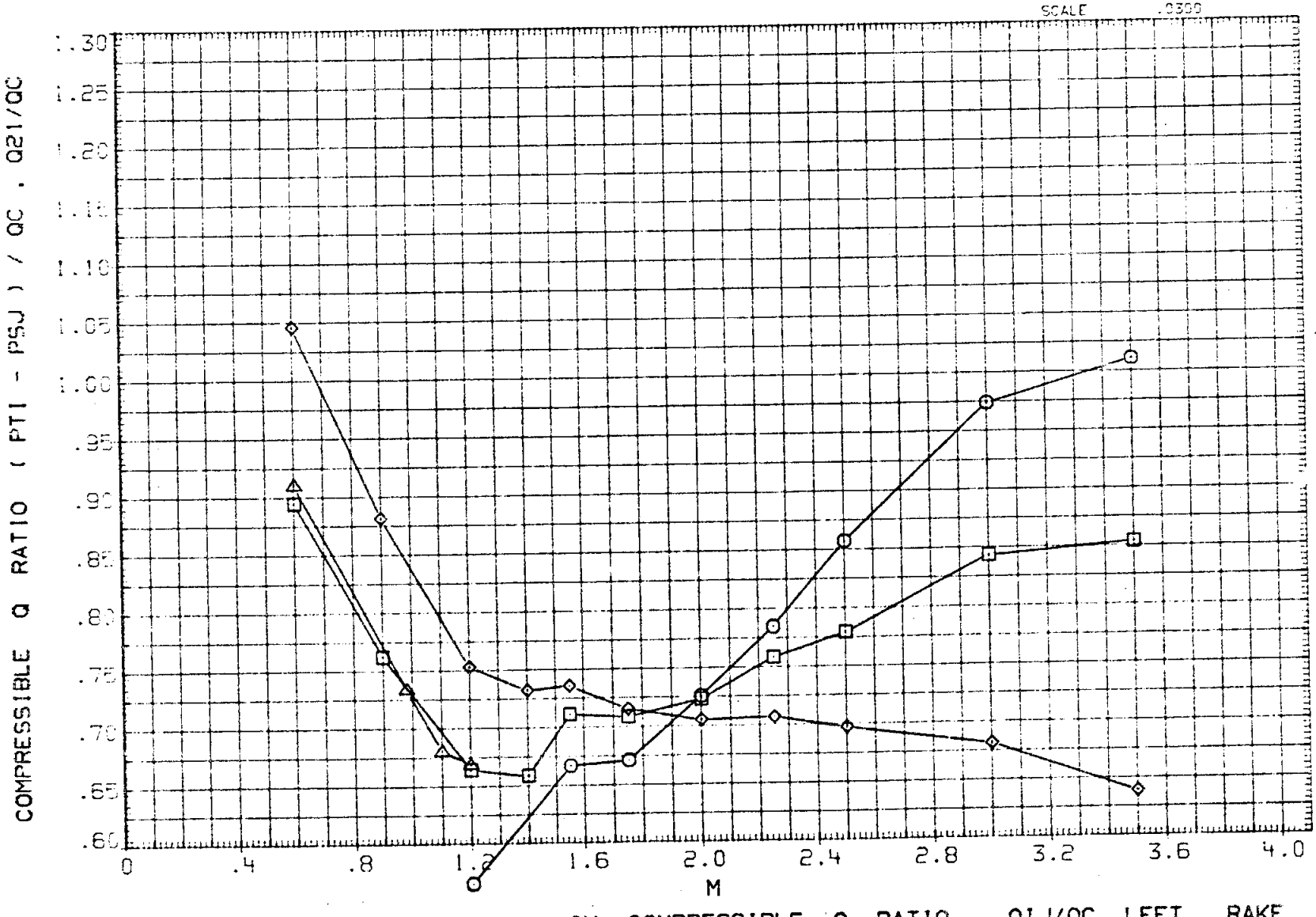


FIG. 19 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

(A) ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
EE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EE7807	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE7801	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6900	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

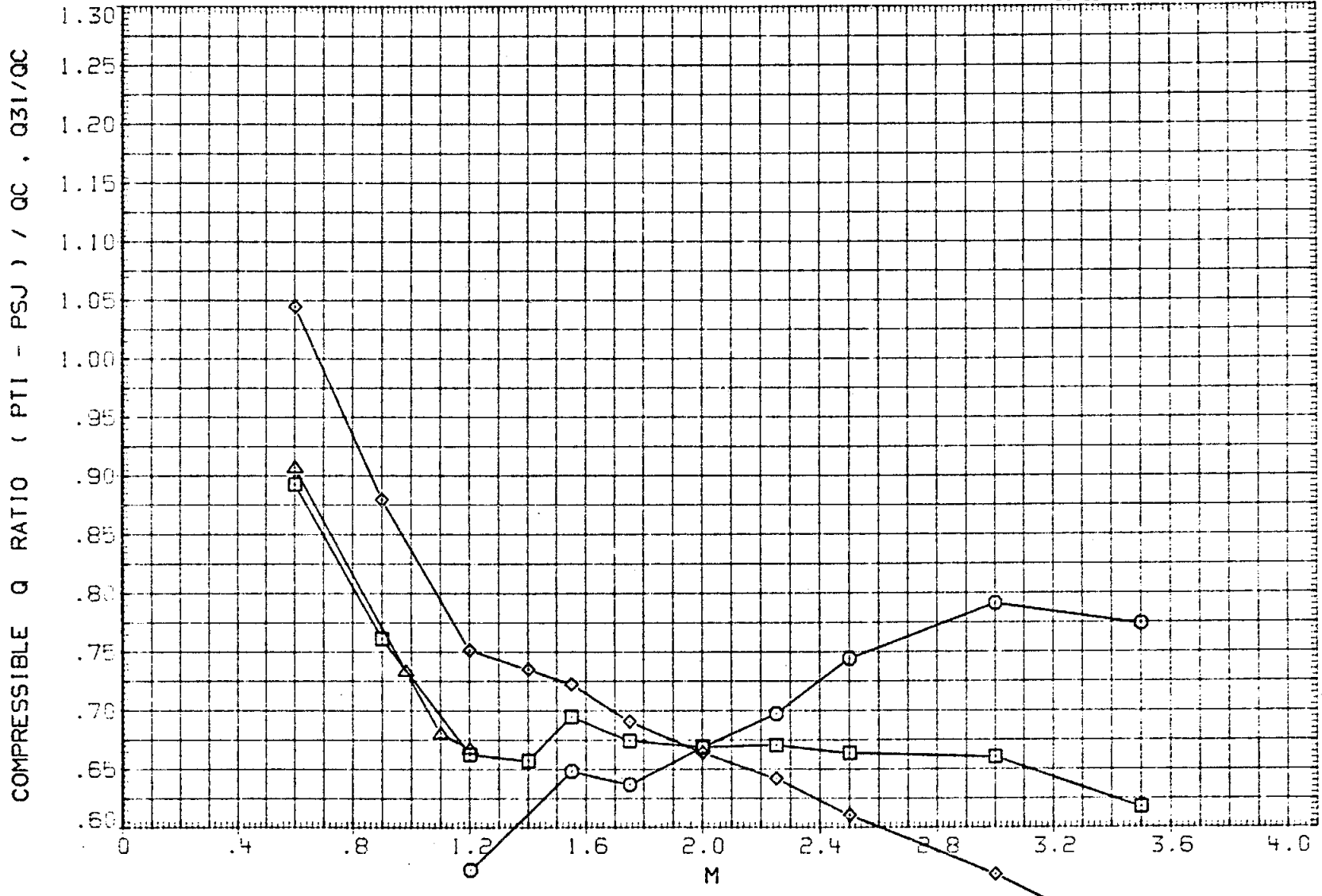


FIG. 19 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

(A)ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	RUDDER
EE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EE7807	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE7901	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
CREF	474.8000	IN.
BREF	956.6800	IN.
XMRP	1076.5800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

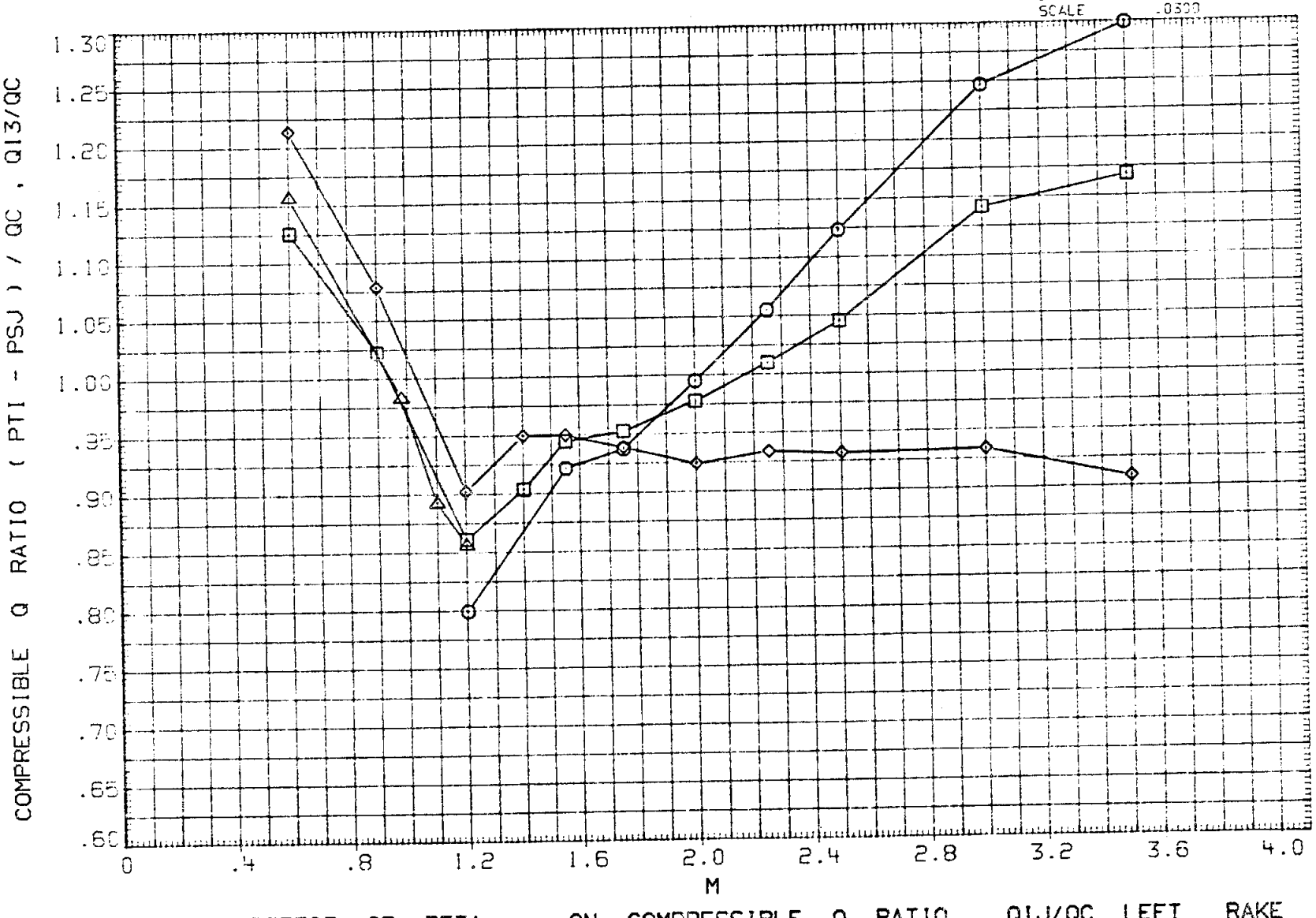


FIG. 19 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

(A) ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
EE7B03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE7B05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EE7B07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE7B01	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRF	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

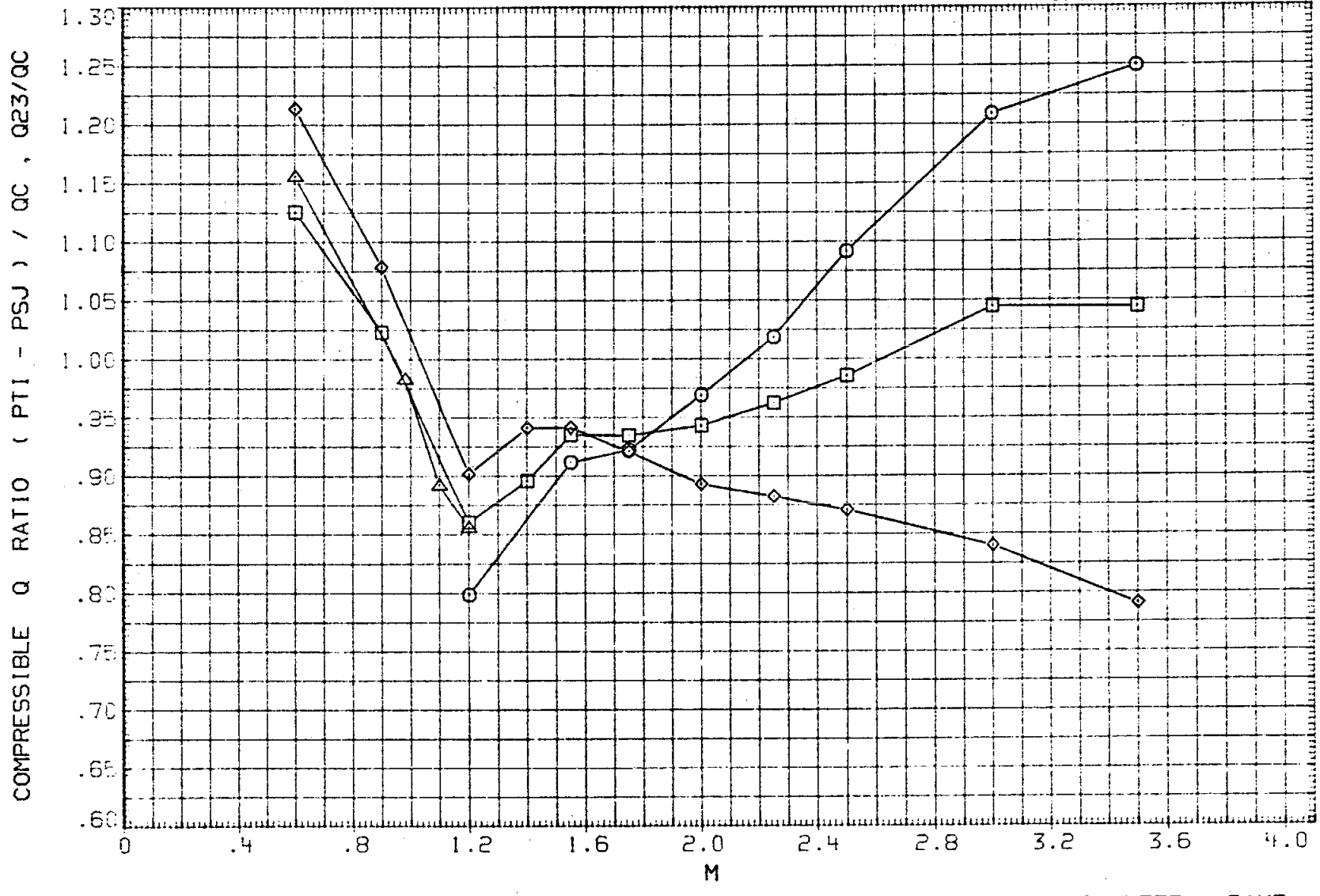


FIG. 19 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

(A)ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BODYFLAP
EE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EE7807	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE7801	△	ARC 11-97-87-094 OA161 ORBITER + WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	935.6600	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.8300	

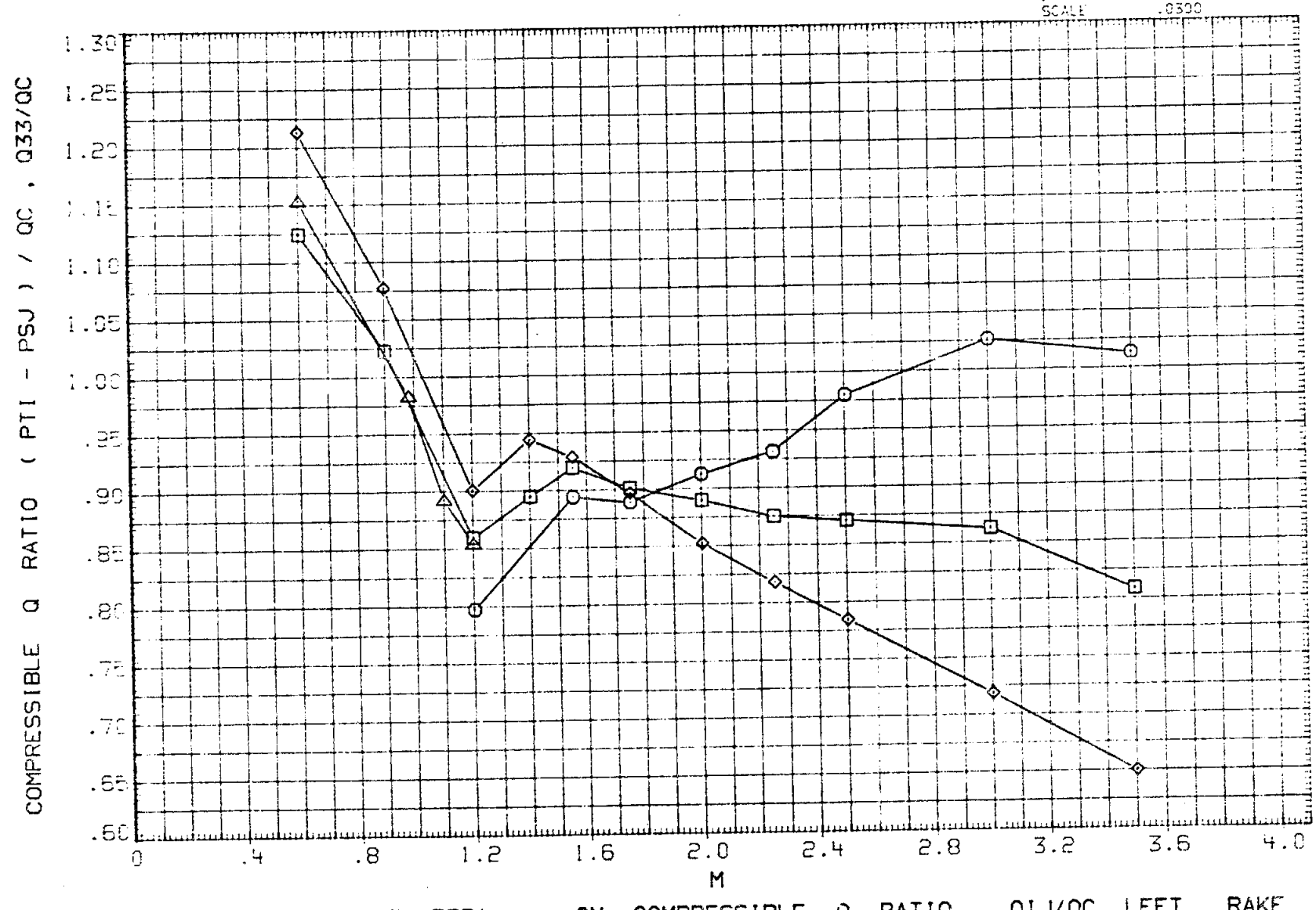


FIG. 19 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

(A) ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
EE7B03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE7B05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EE7B07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE7B01	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

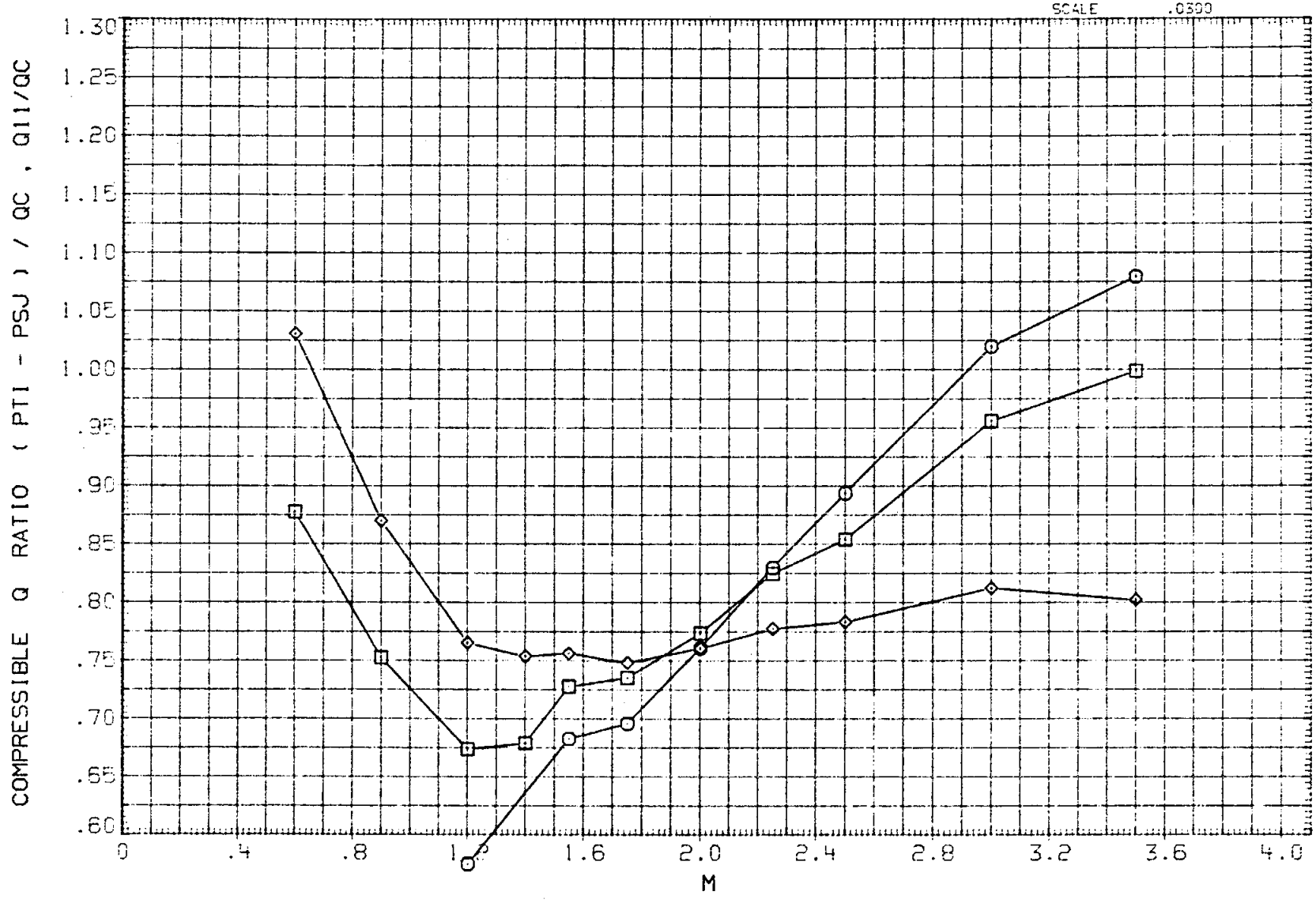


FIG. 19 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

(B)ALPHA = 6.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
EE78OR	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE78OS	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EE78OT	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE78OU	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

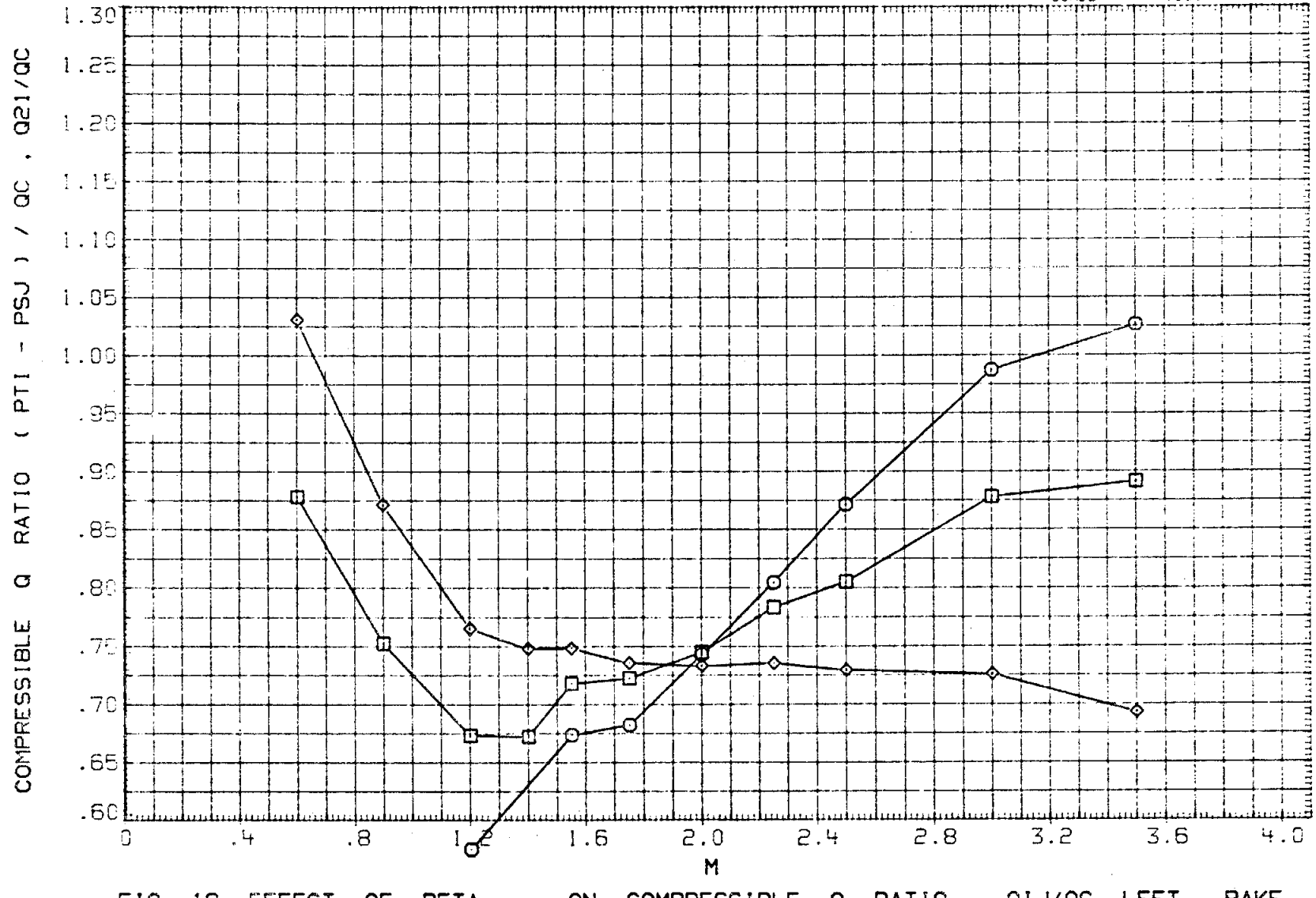


FIG. 19 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

(B)ALPHA = 6.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
EE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EE7807	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE7801	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.8900	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0700	

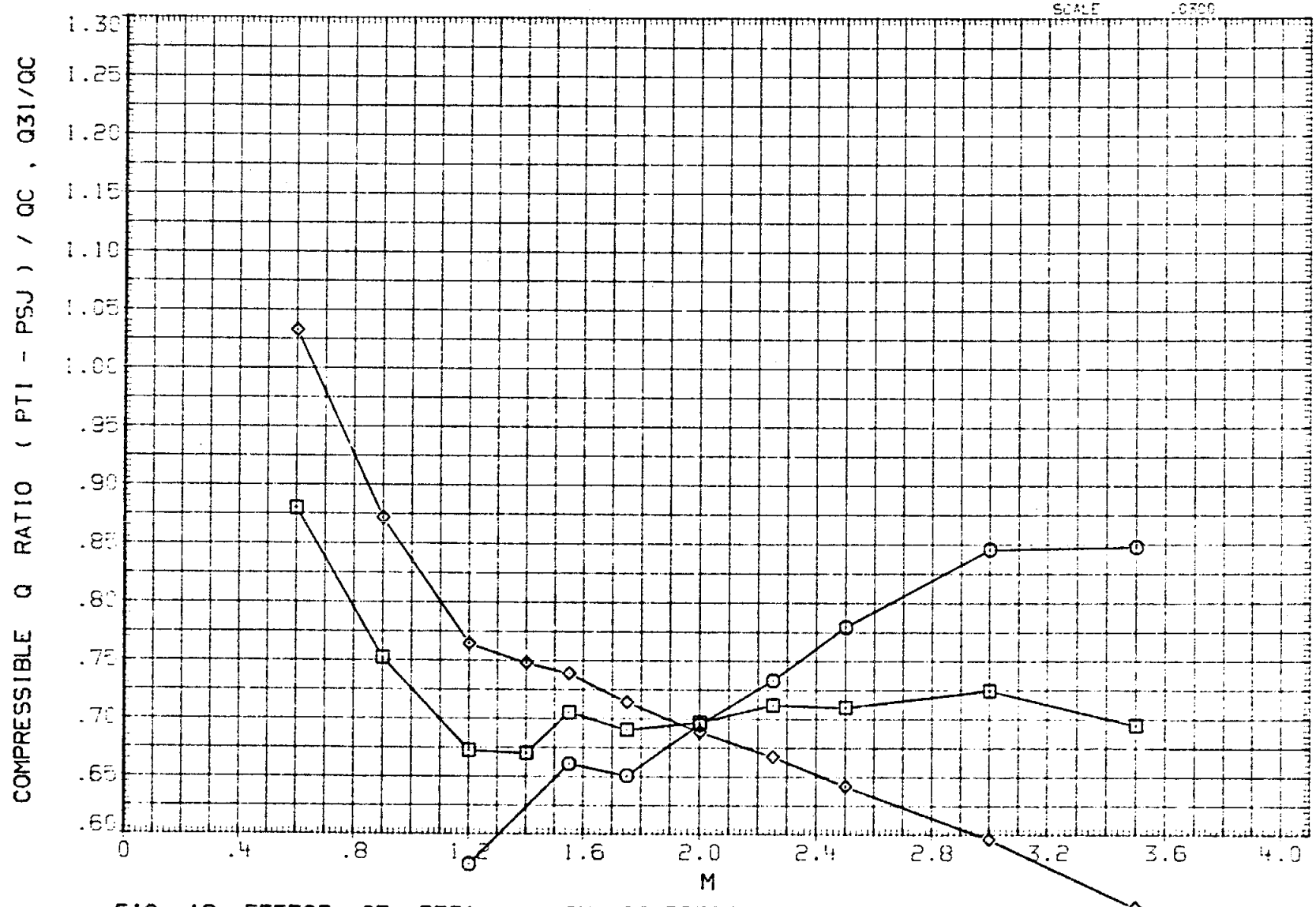


FIG. 19 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

(B)ALPHA = 6.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BODYFLAP
EE7802	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EE7807	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE7801	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6900	IN.
XMRP	1076.5800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

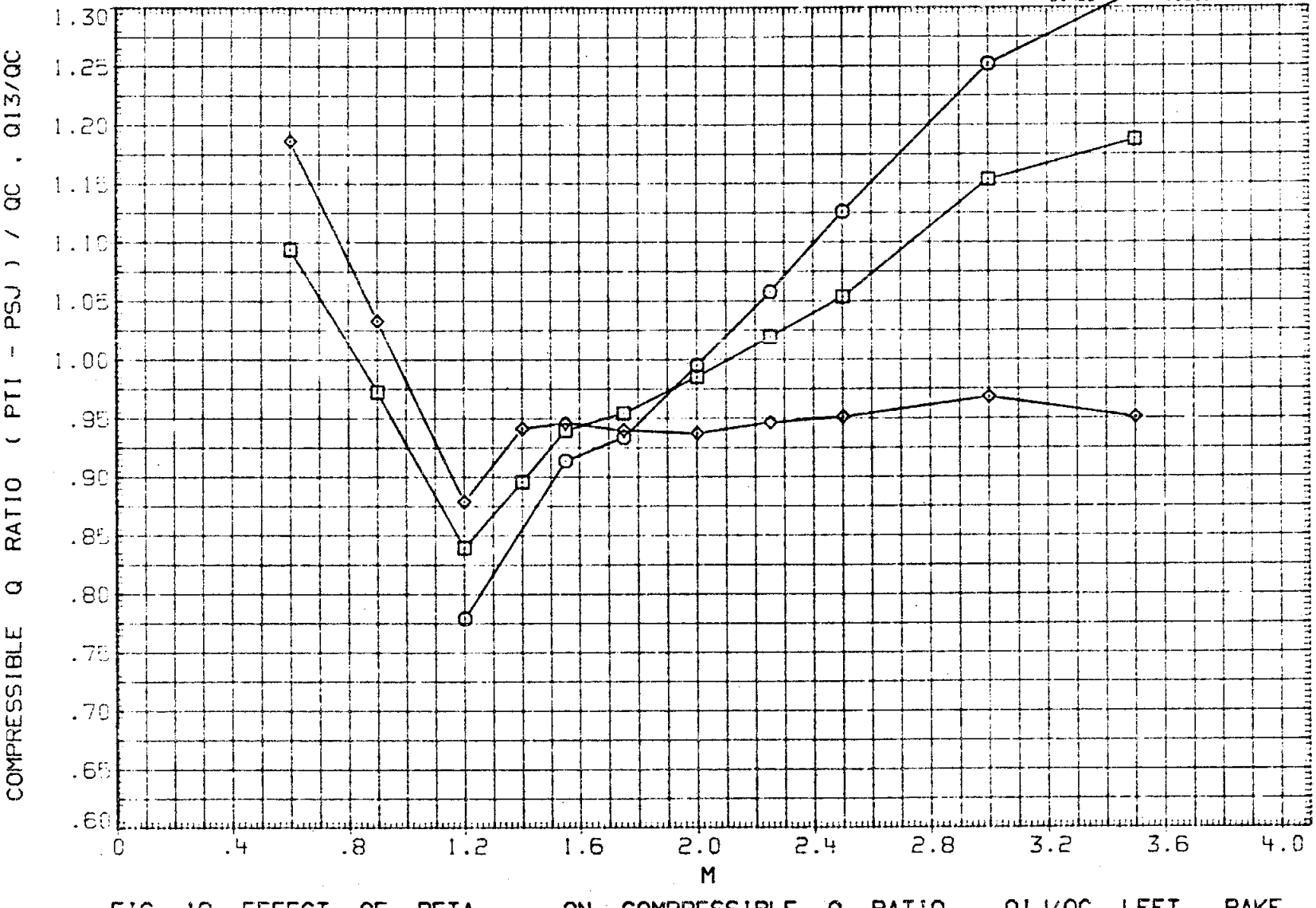


FIG. 19 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

(B)ALPHA = 6.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
EE7B03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE7B05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EE7B07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE7B01	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

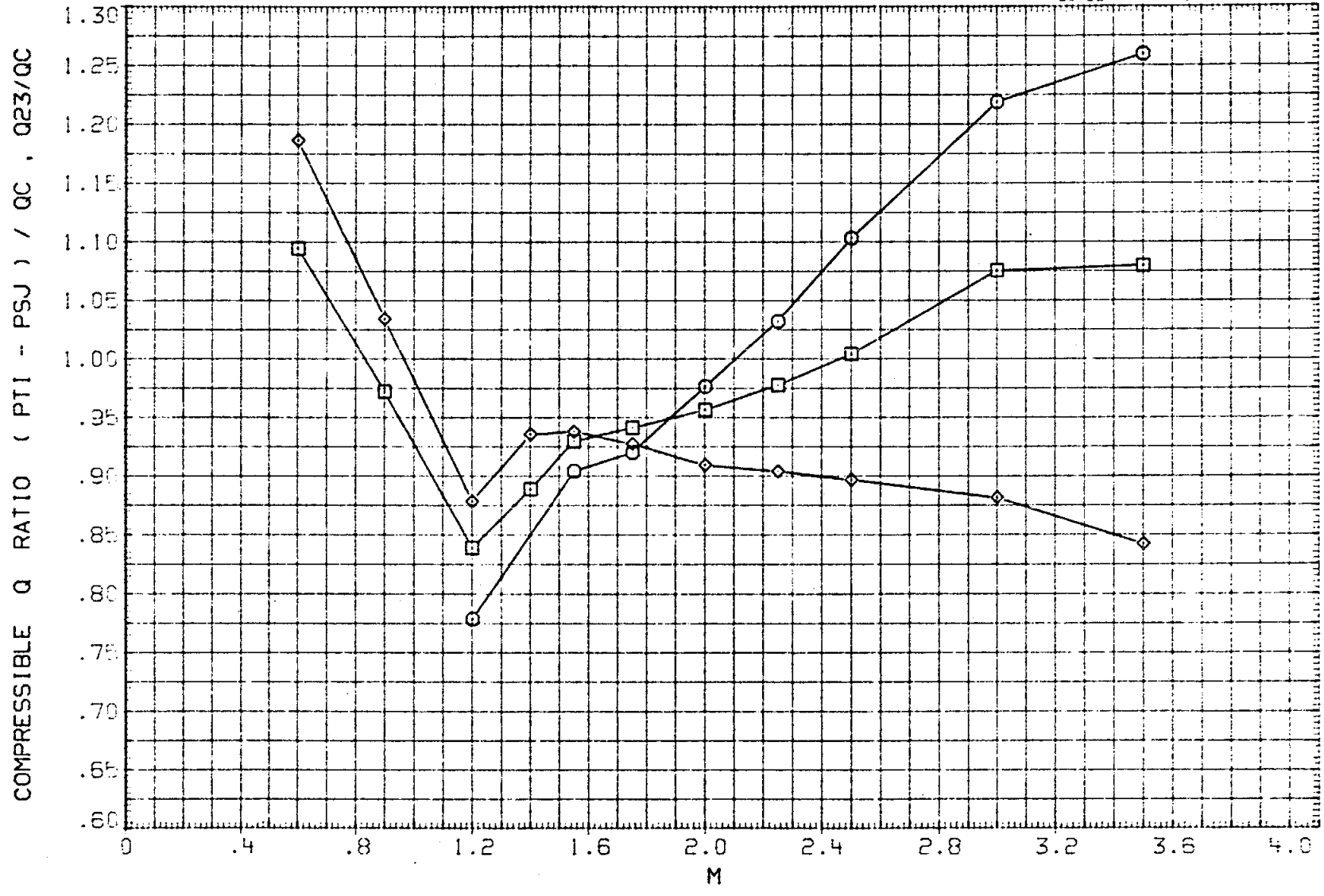


FIG. 19 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

(B)ALPHA = 6.00

DATA SET	SYMBOL	CONFIGURATION
EE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES
EE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES
EE7807	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES
EE7801	△	DATA NOT AVAILABLE

BETA	ELEVON	AILRON	BDFLAP
-5.000	.000	.000	-7.170
.000	.000	.000	-7.170
5.000	.000	.000	-7.170
.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. X0
YMRP	.0000	IN. Y0
ZMRP	375.0000	IN. Z0
SCALE	.0300	

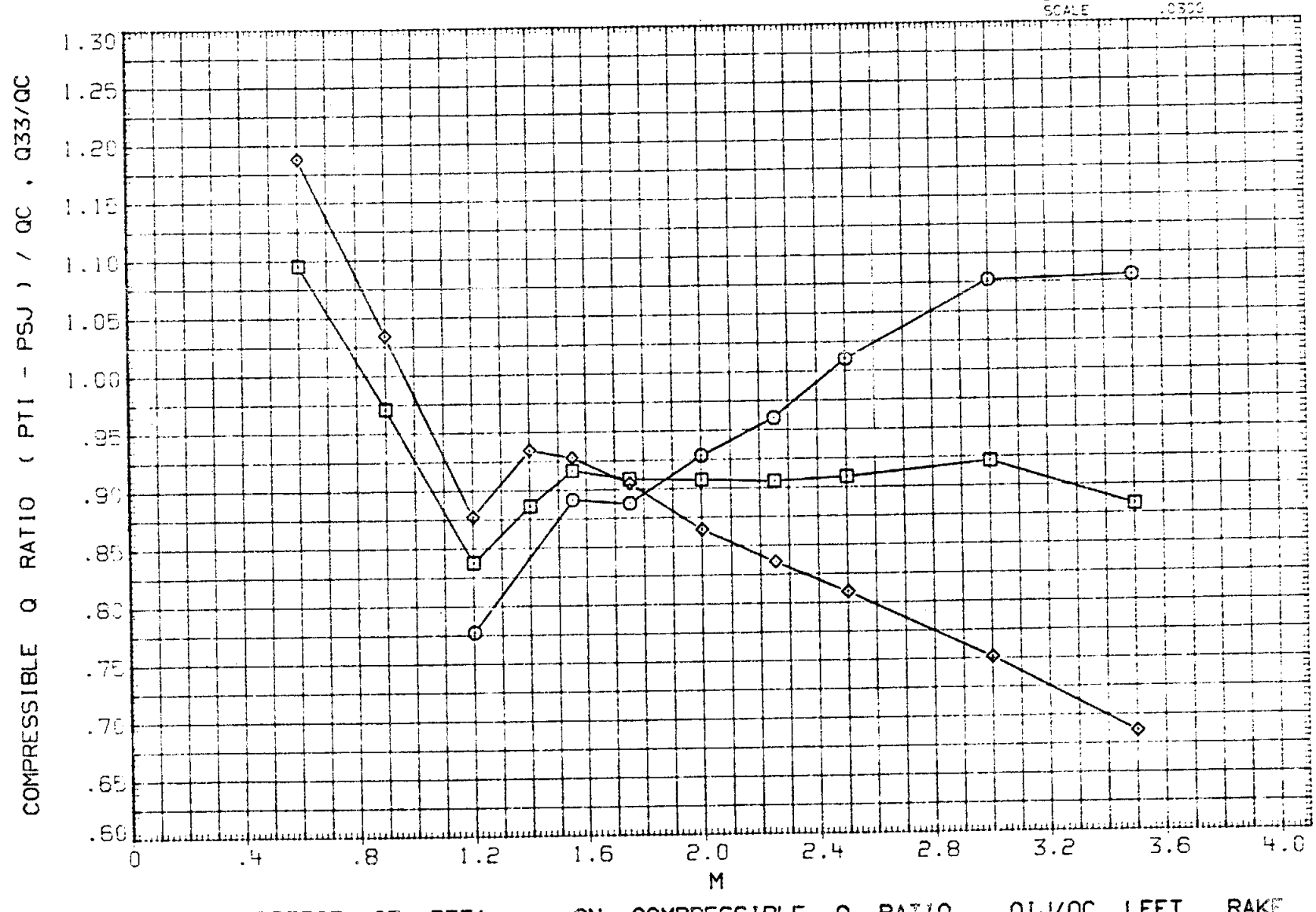


FIG. 19 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

(B) ALPHA = 6.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
EE7603	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE7605	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EE7607	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE7601	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

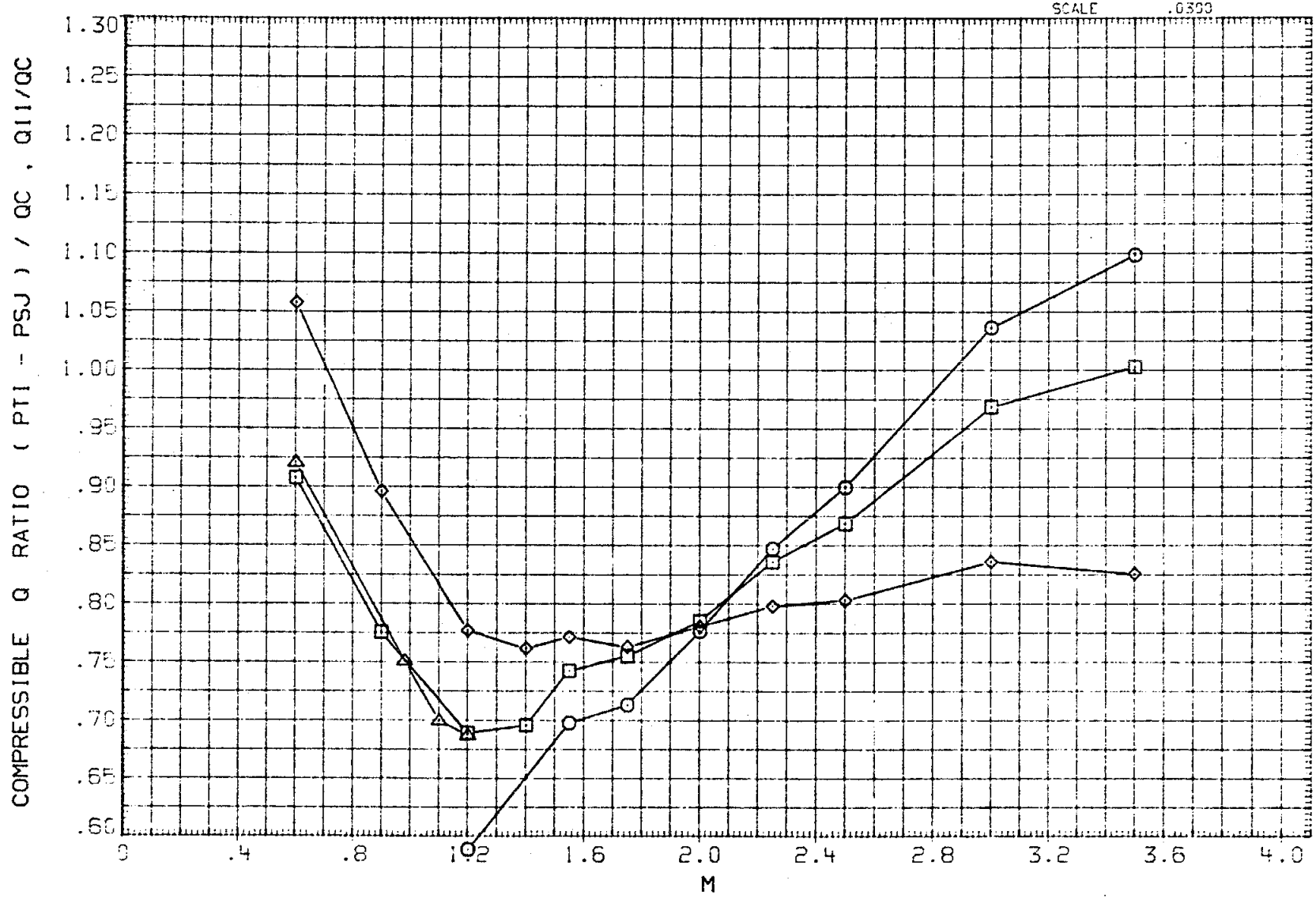


FIG. 19 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

(C)ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
66T503	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
66T505	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
66T507	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
66T511	△	ARC 11-97-87-094 OA161 ORBITER + WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.5000	

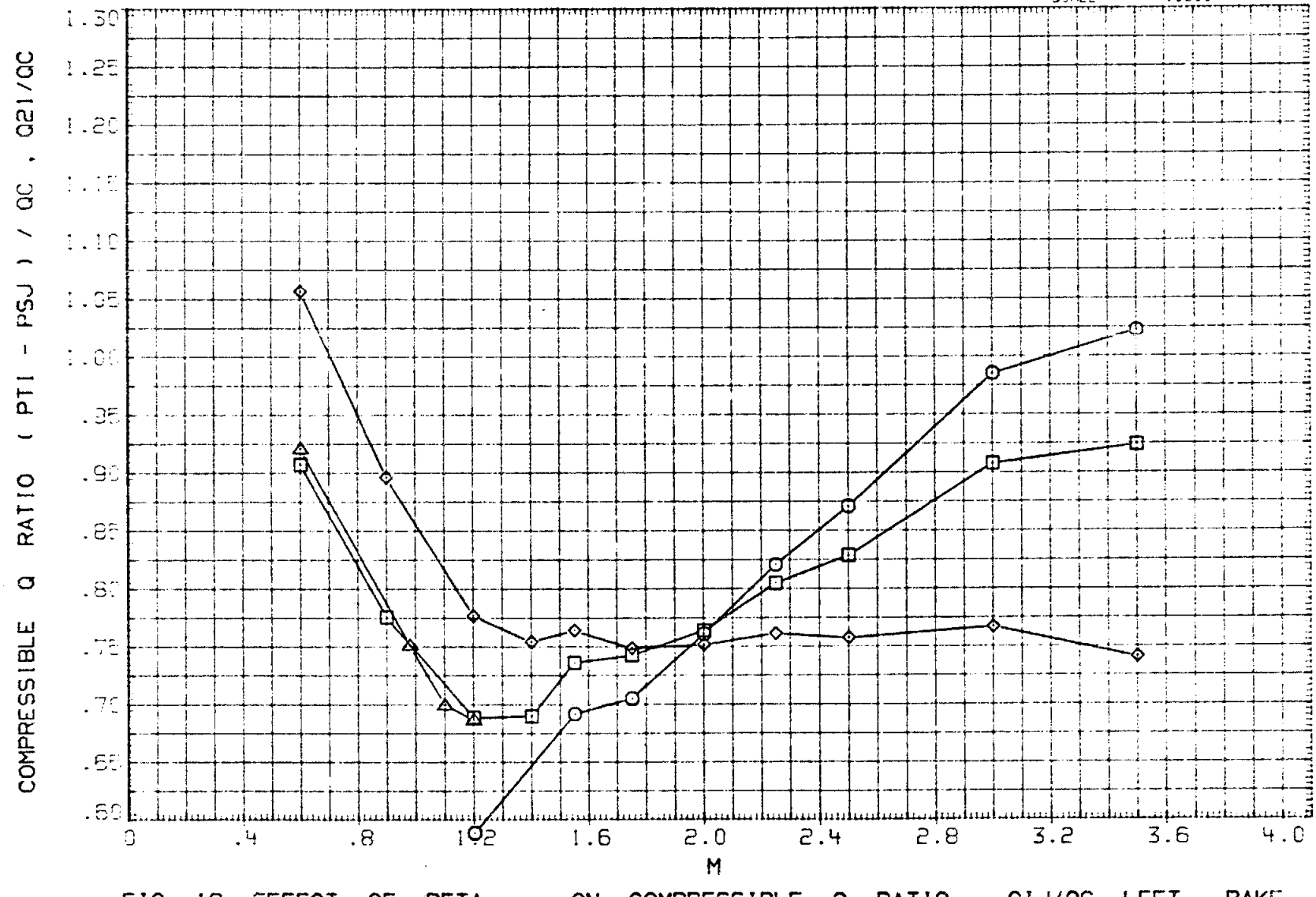


FIG. 19 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

(C)ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
EE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EE7807	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE7801	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

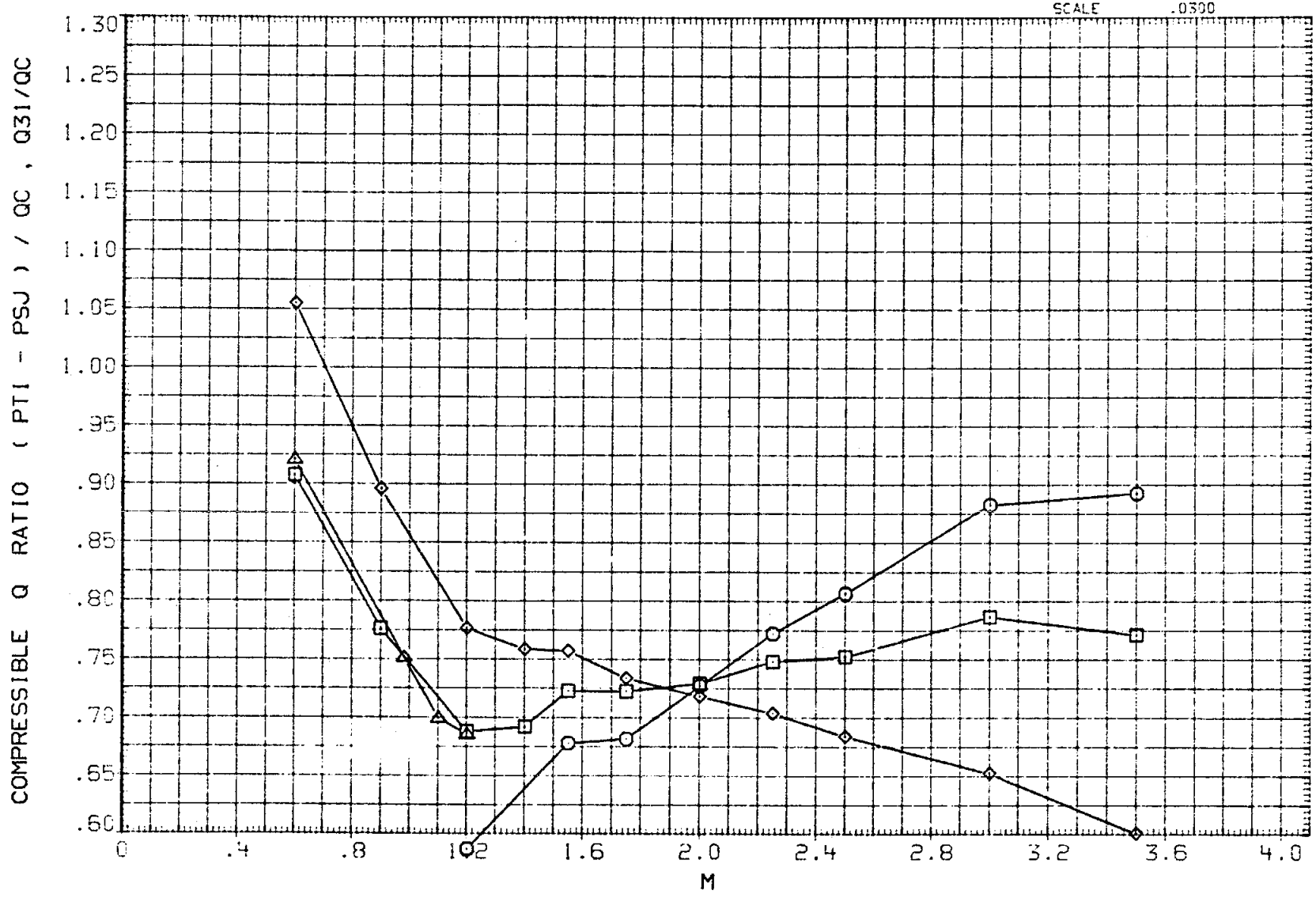


FIG. 19 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

(C)ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDY LAP
EE78C3	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE78C5	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EE78C7	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE78G1	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6300	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

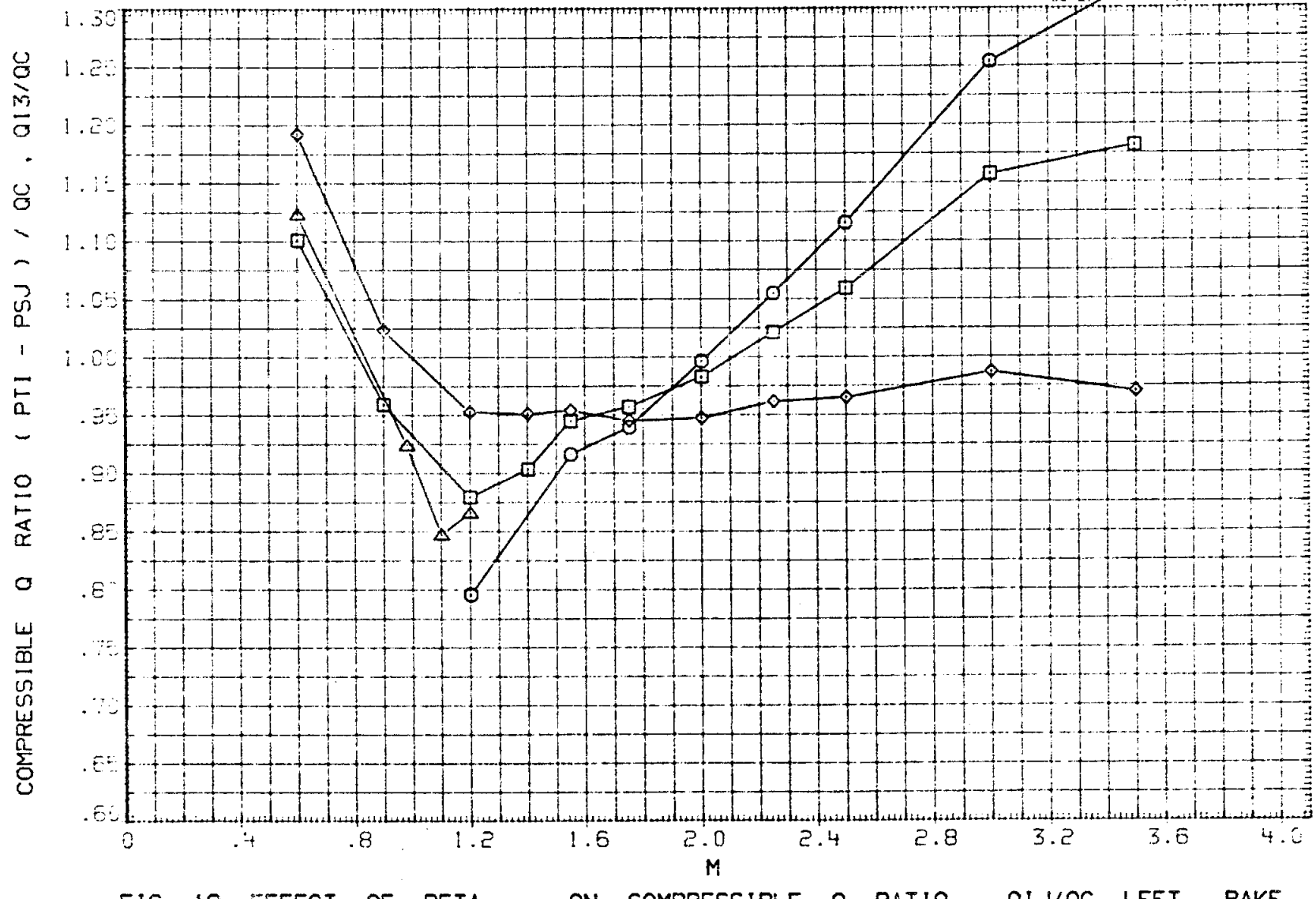


FIG. 19 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

(C)ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
EE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EE7807	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE7801	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

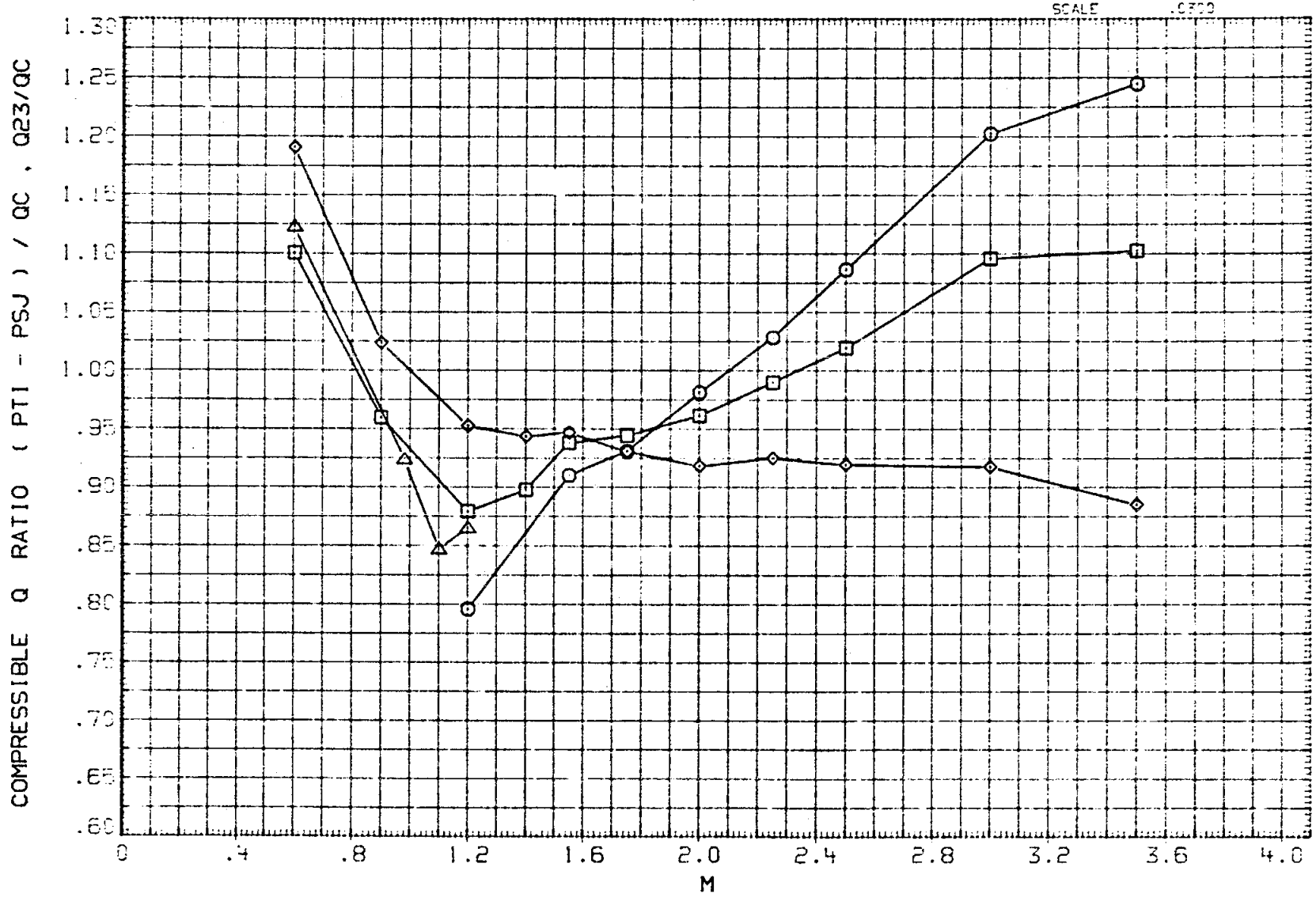


FIG. 19 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

(C)ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
EE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EE7807	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE7801	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.8800	IN.
XMRP	1076.6500	IN. X0
YMRP	.0000	IN. Y0
ZMRP	375.0000	IN. Z0
SCALE	.0500	

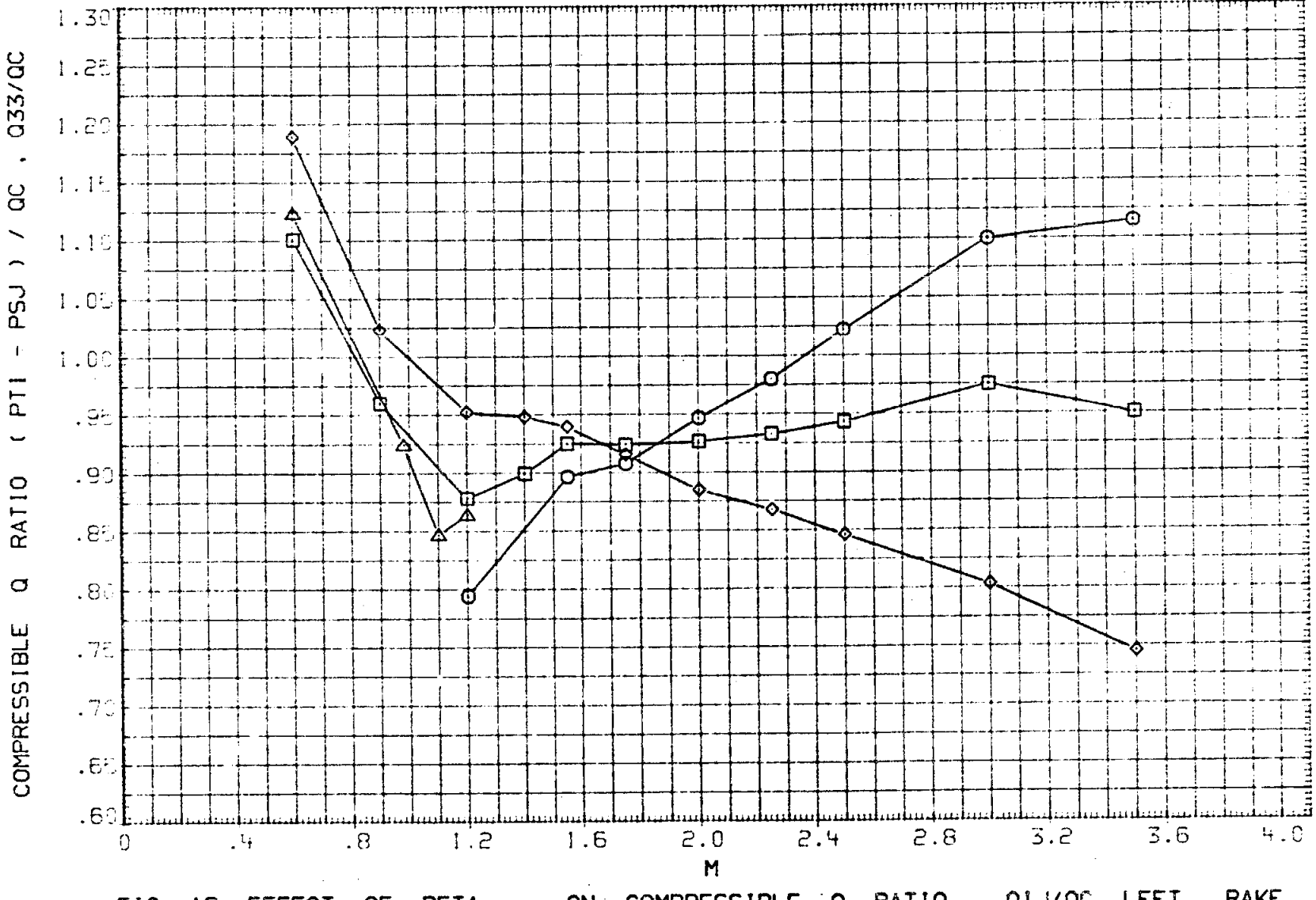


FIG. 19 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

(C) ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
EE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EE7807	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE7801	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.6000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

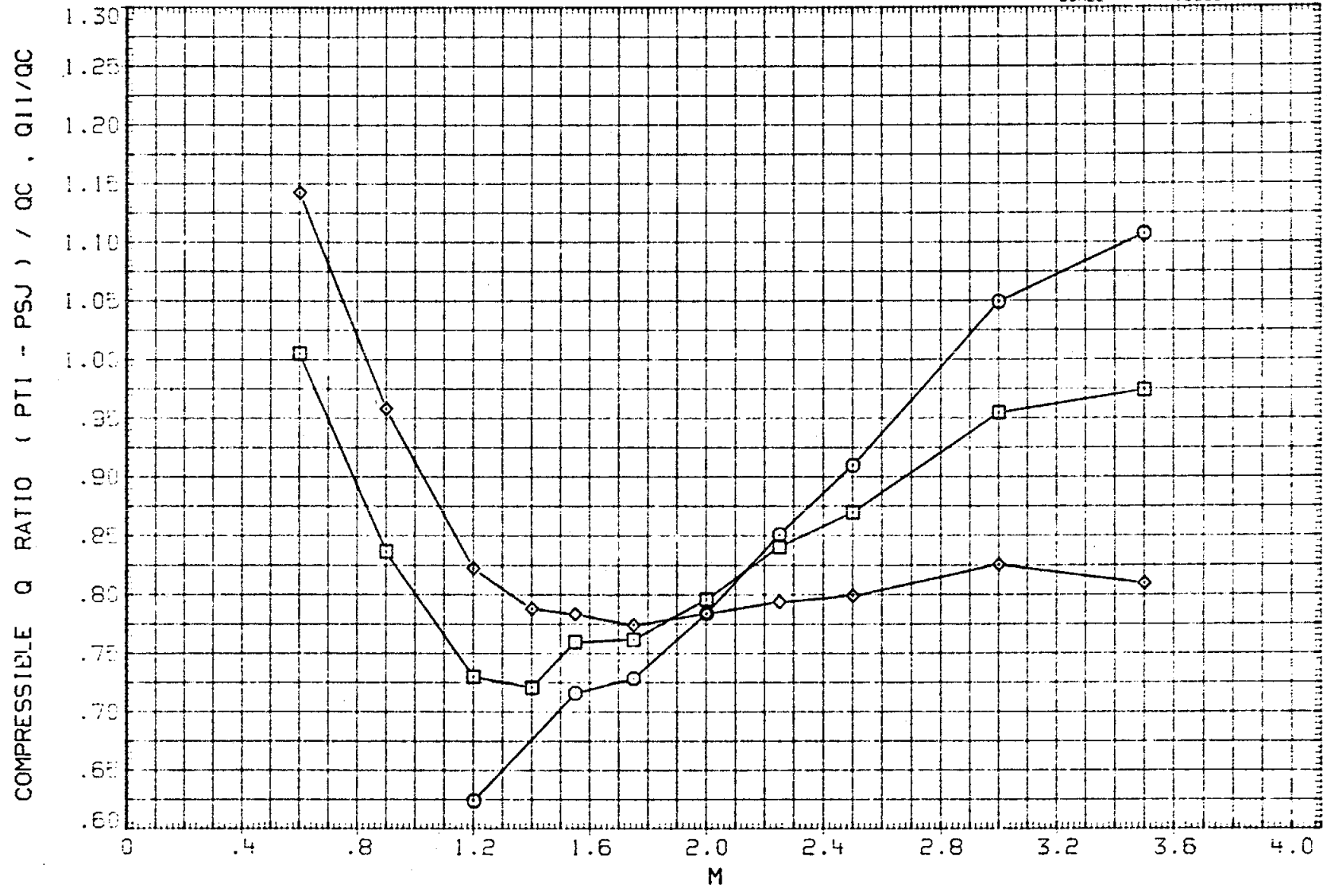


FIG. 19 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

(D) ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
EE7B03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE7B05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EE7B07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE7B01	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.0800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

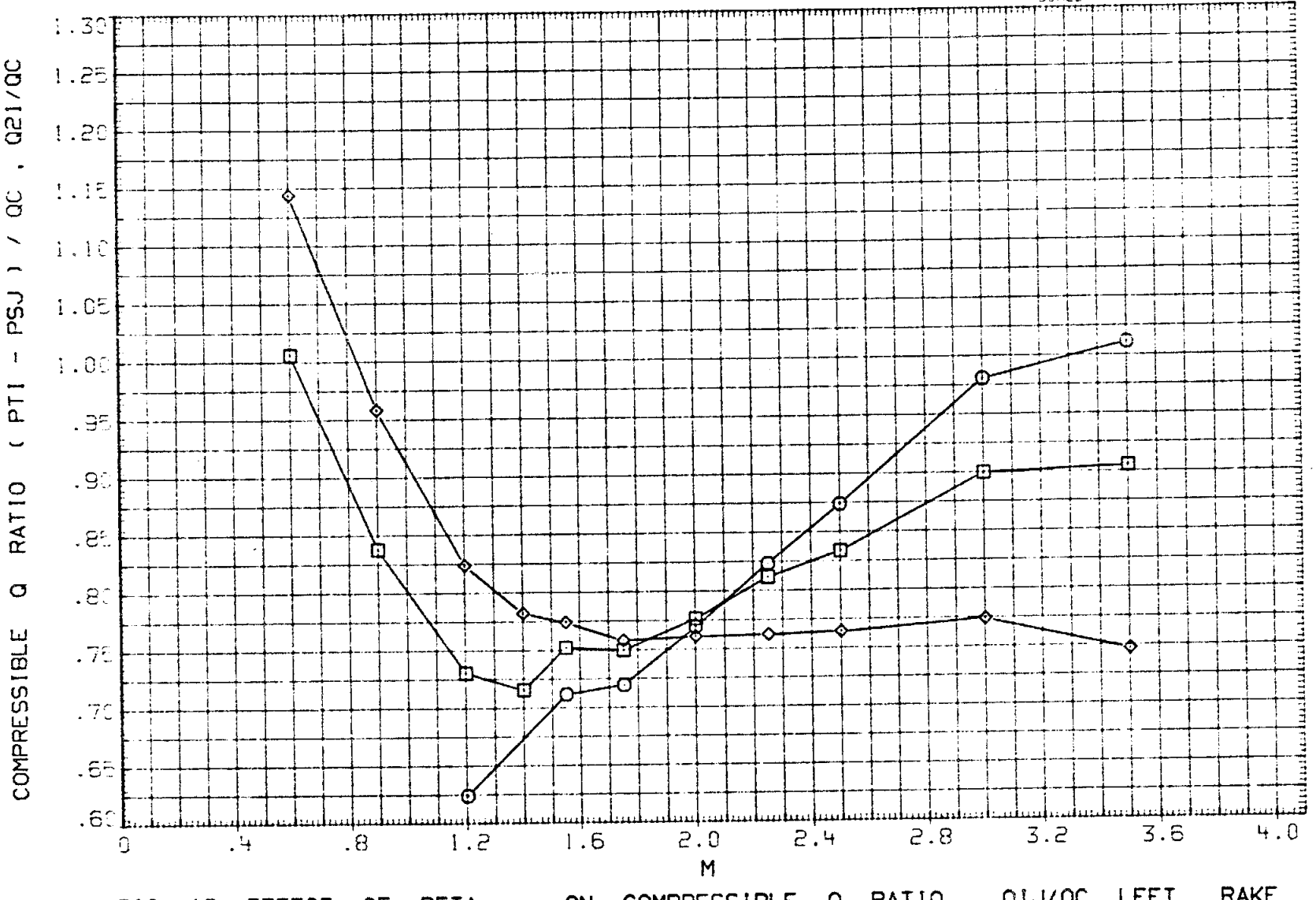


FIG. 19 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

(D) ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
EE7B03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE7B05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EE7B07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE7R01	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZC
SCALE	.0300	

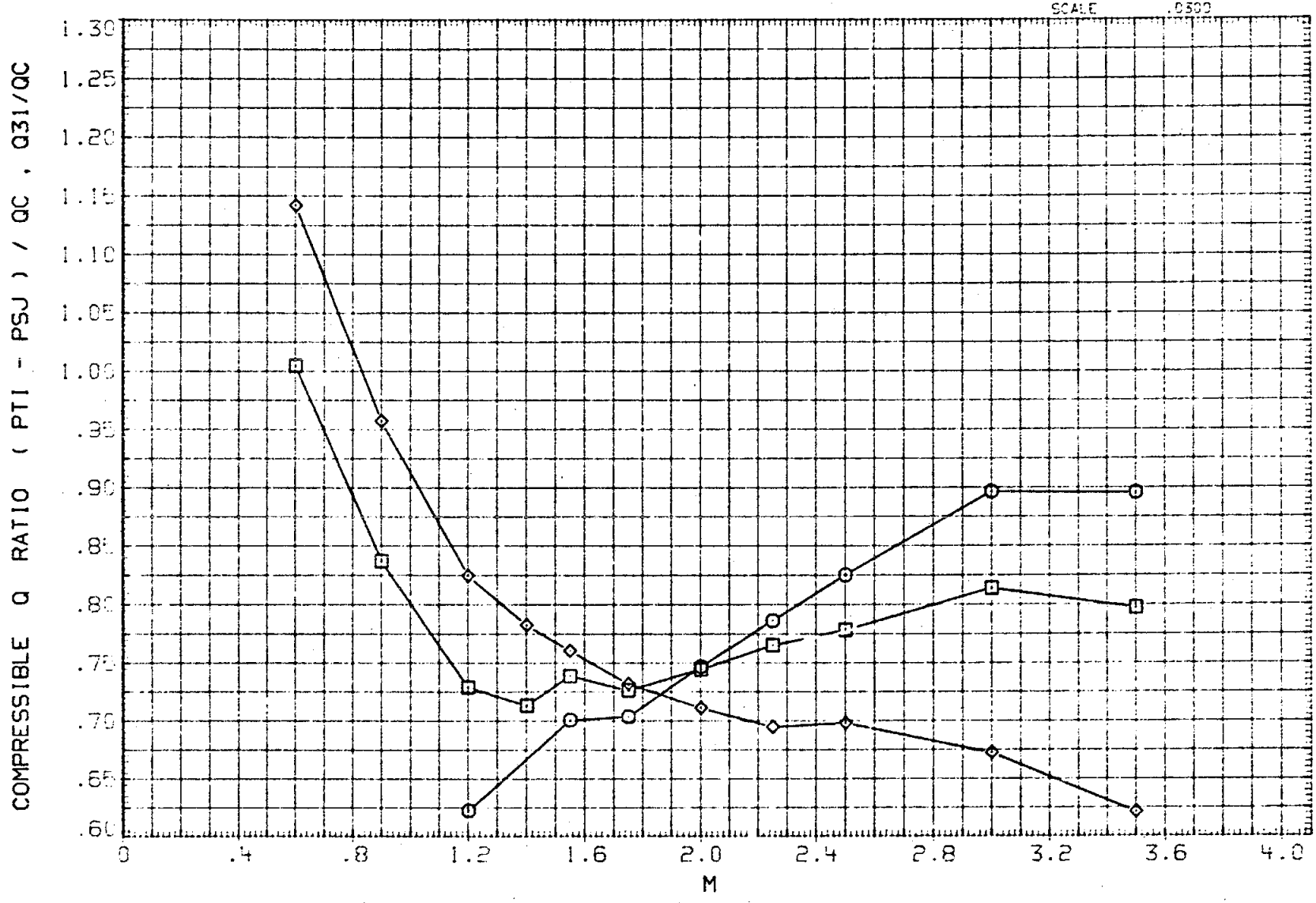


FIG. 19 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

(D) ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
EE7803	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE7804	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EE7807	△	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE7801		DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.8400	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

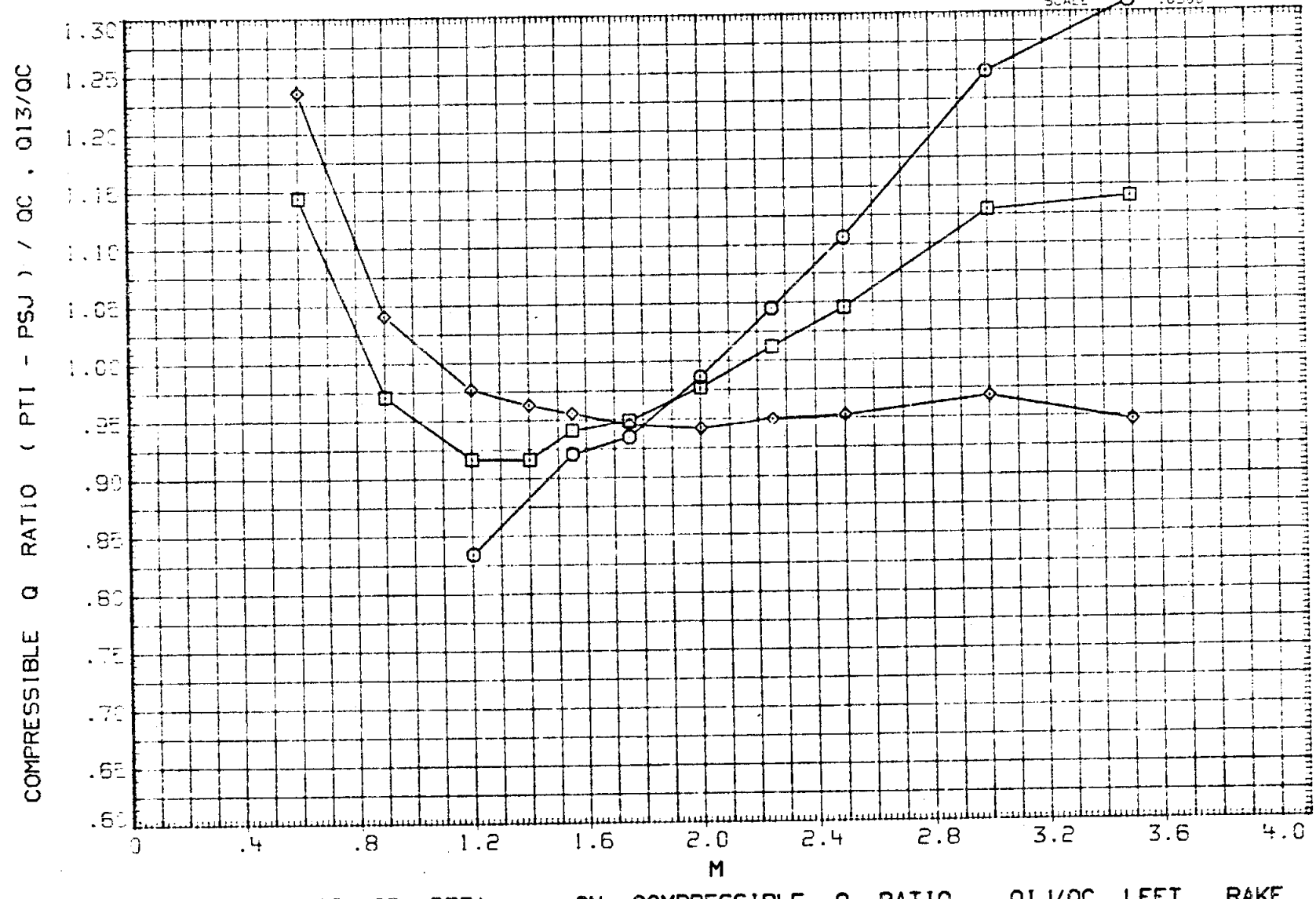


FIG. 19 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

(D)ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
EE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EE7807	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE7801	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	935.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

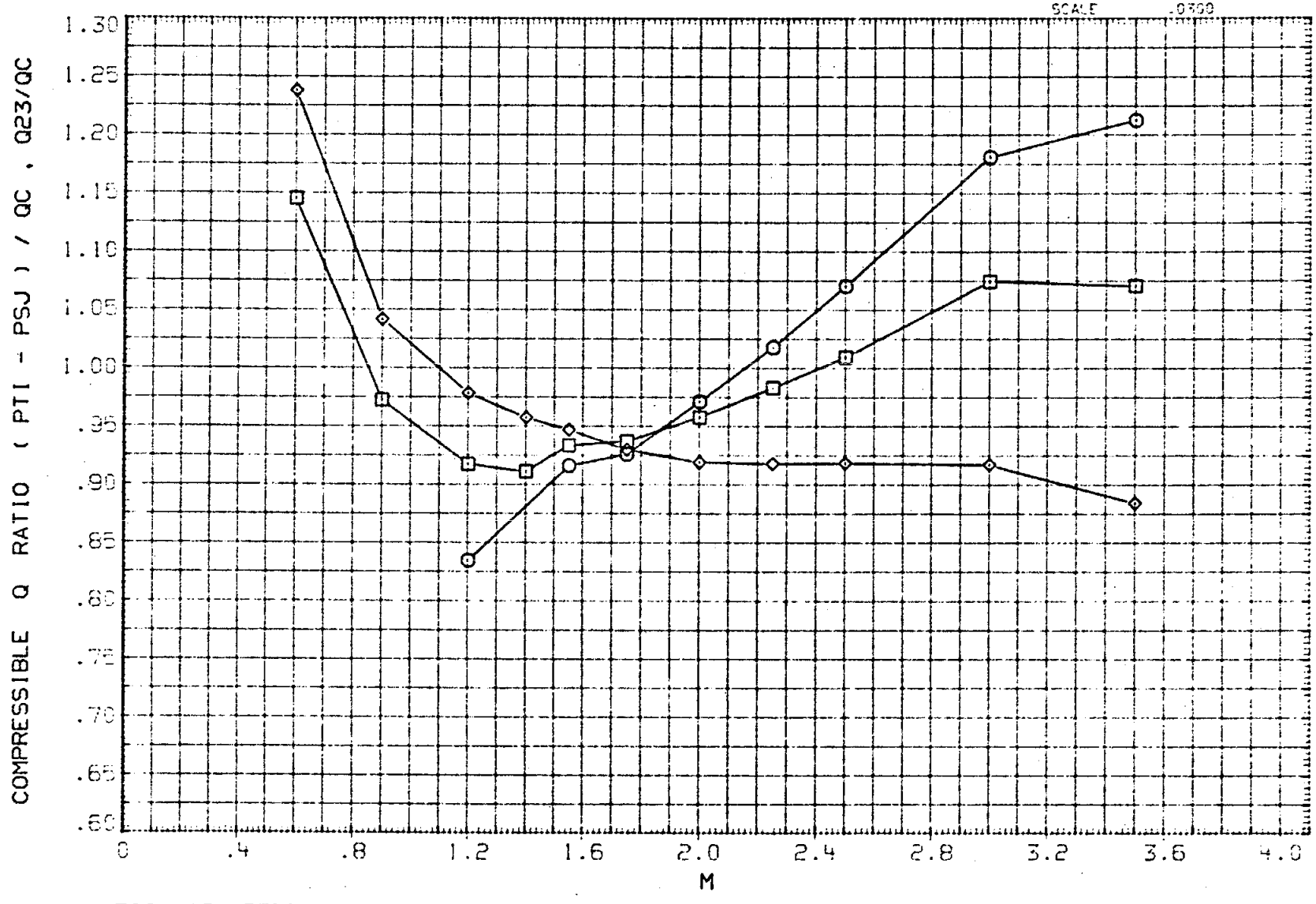


FIG. 19 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

(D)ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BODY FLAP
EE78O3	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE78O5	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EE78O7	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE78O1	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	935.4600	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0400	

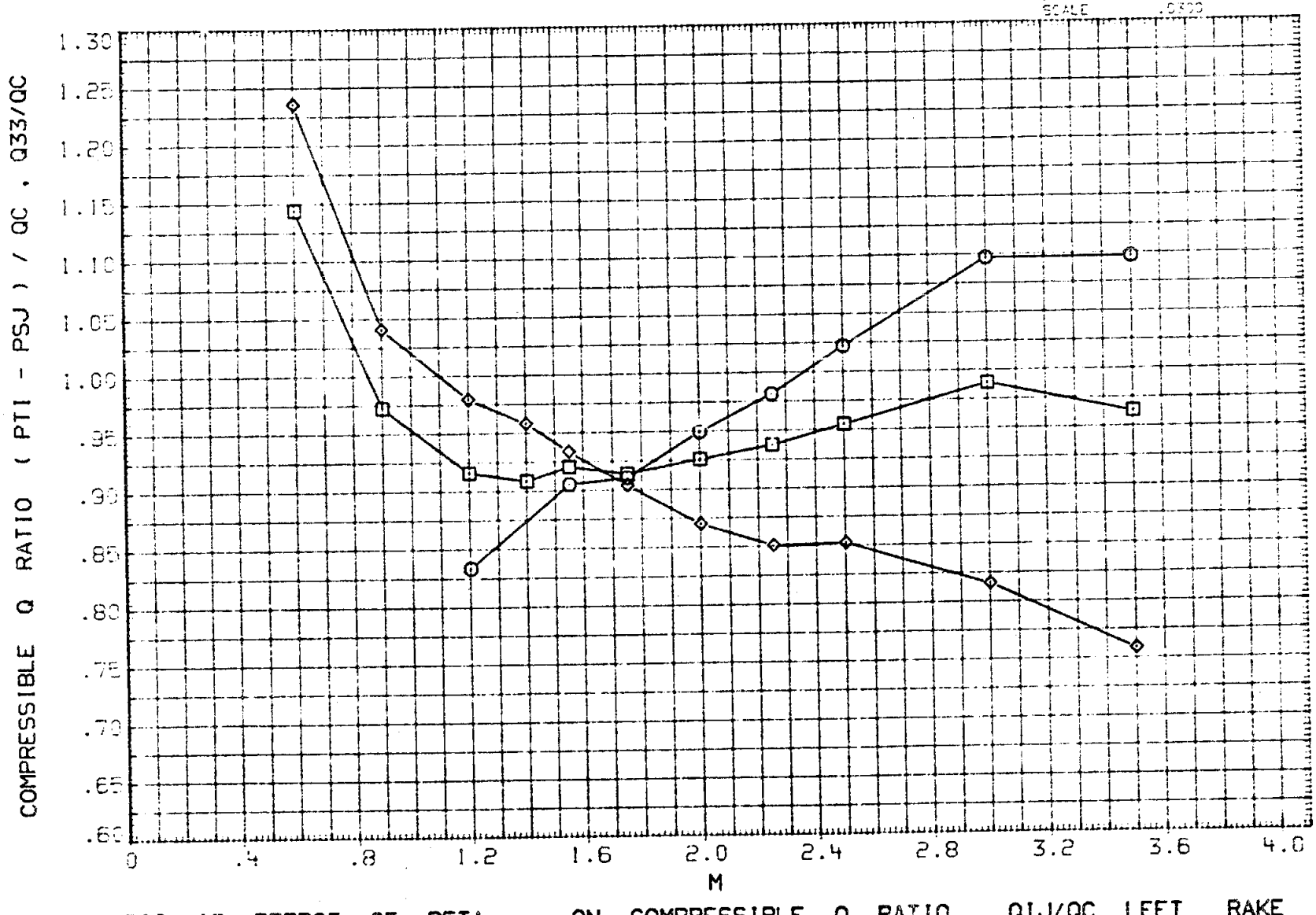


FIG. 19 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

(D)ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
EE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EE7807	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE7801	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	935.8800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

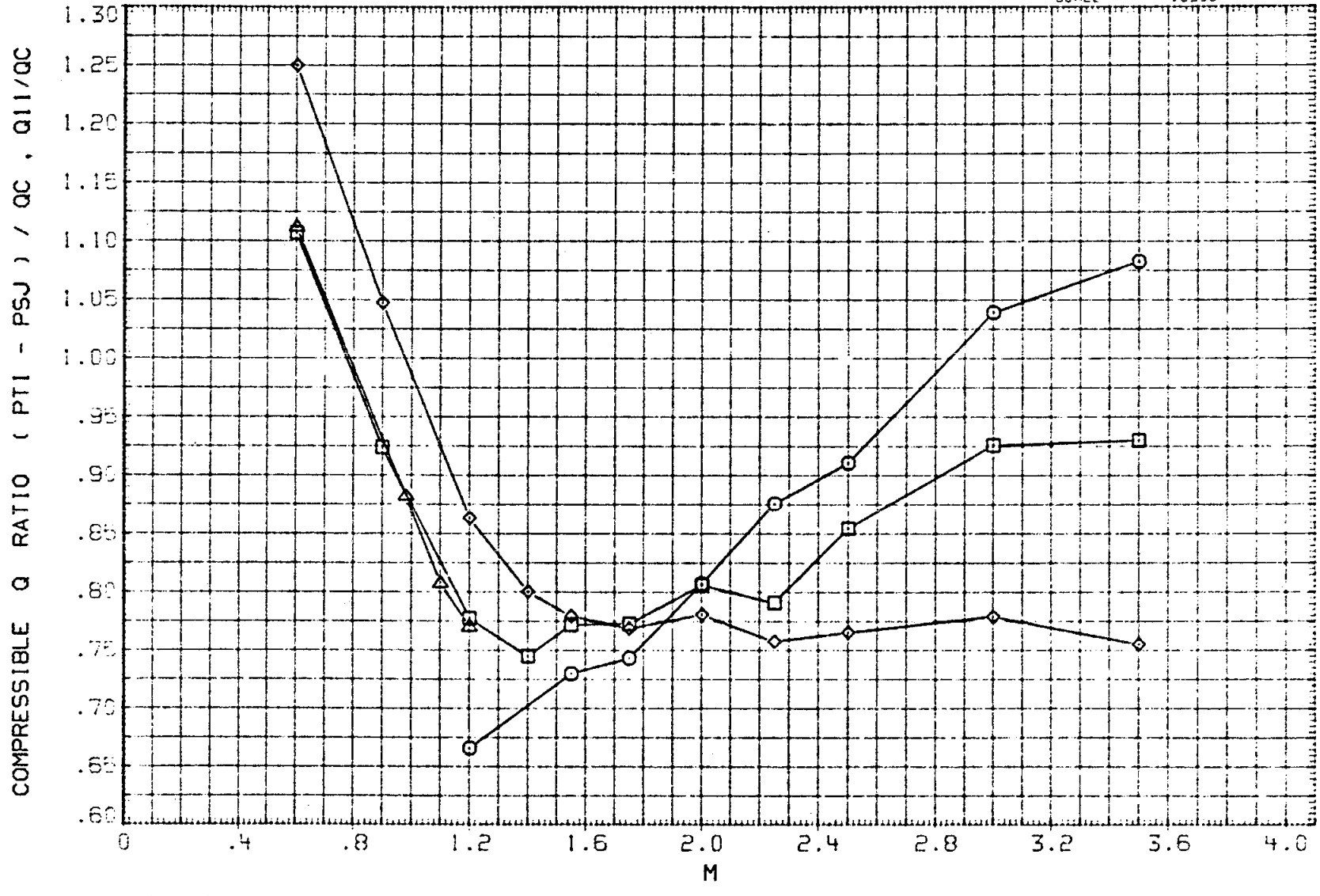


FIG. 19 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

(E) ALPHA = 24.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	RUDDLAP
EE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EE7807	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE7801	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	8690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0800	

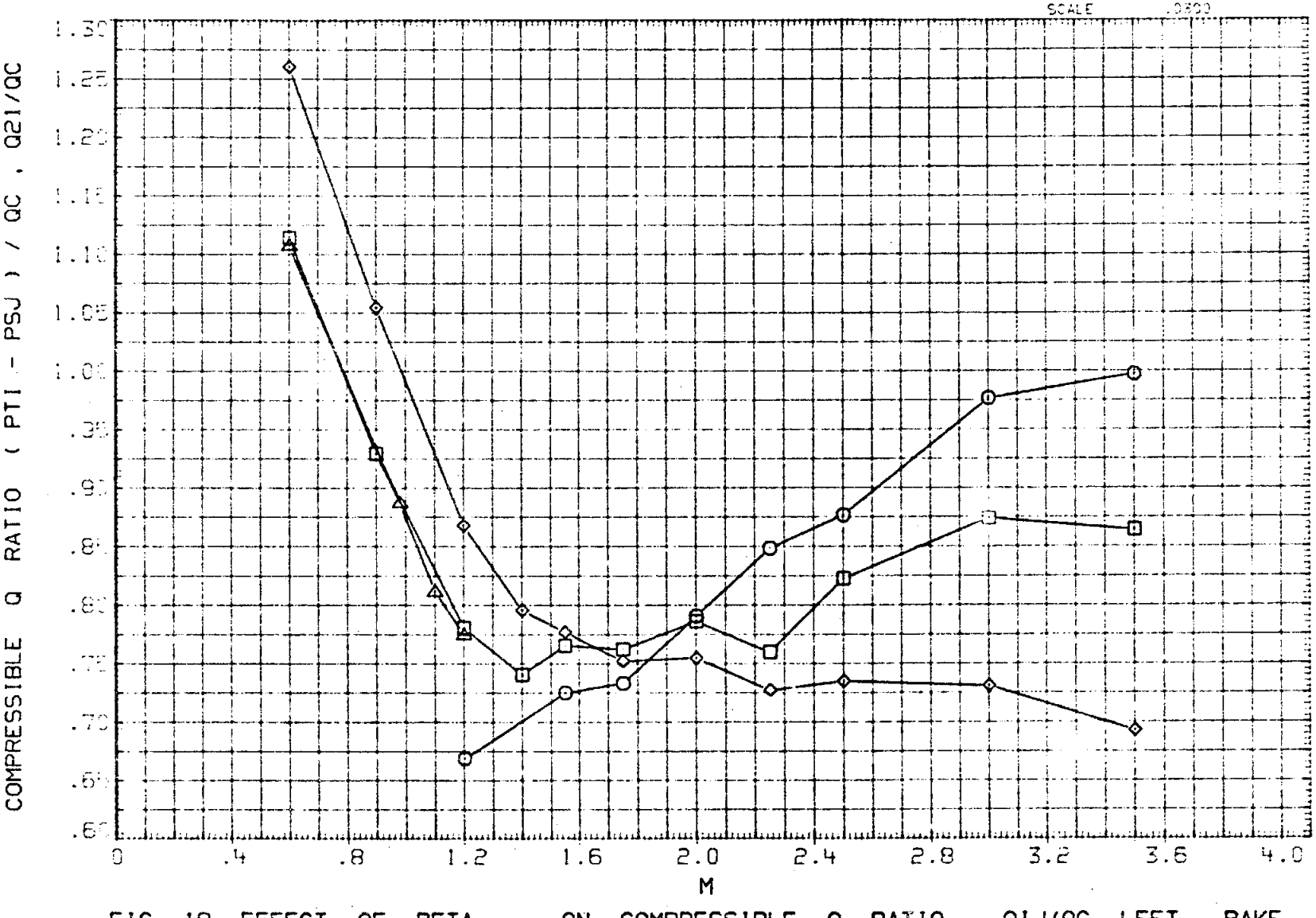


FIG. 19 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

(E) ALPHA = 24.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
EE7B03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
EE7B05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
EE7B07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
EE7B01	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

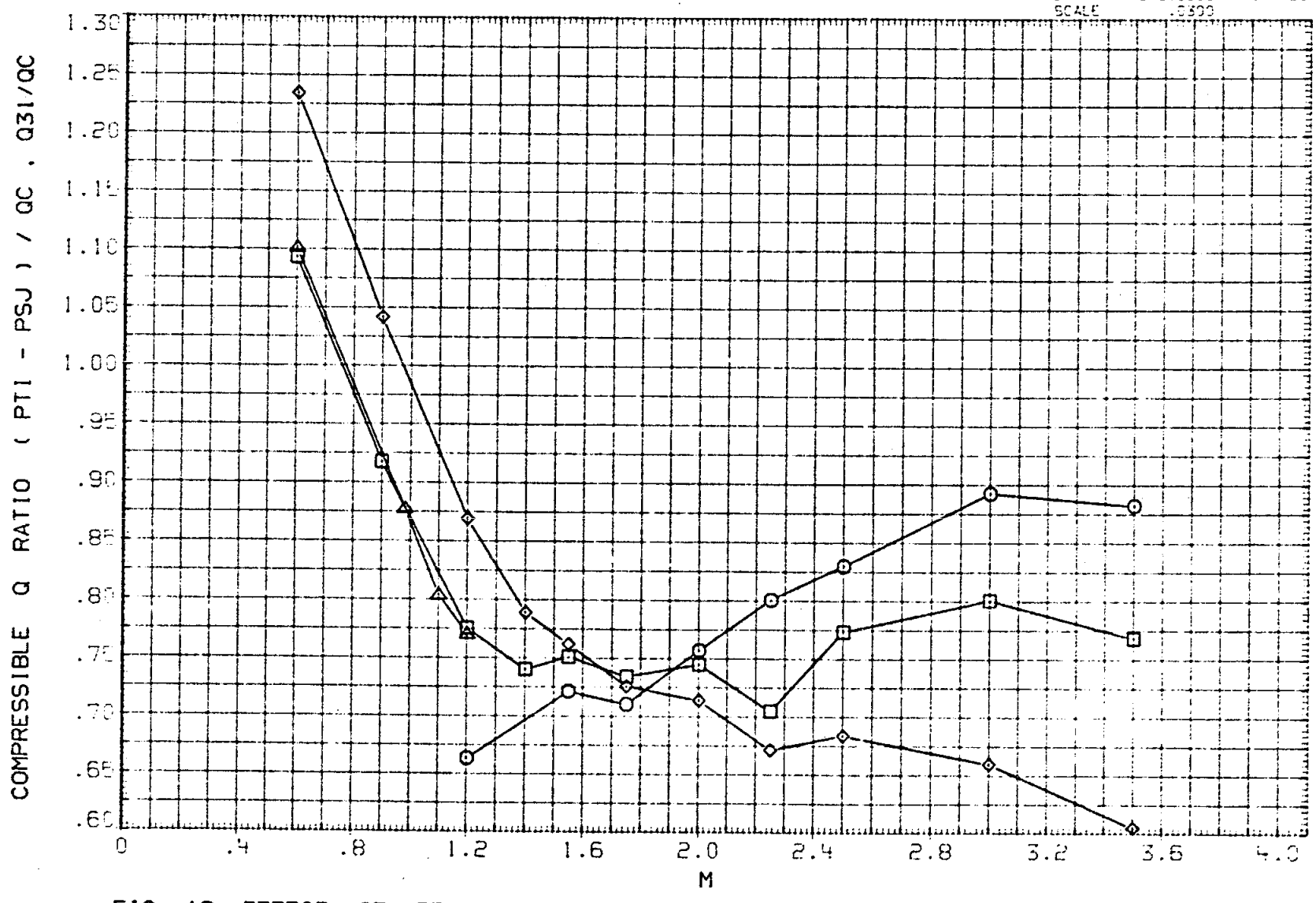


FIG. 19 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

(E)ALPHA = 24.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BODY FLAP
[illegible]	[illegible]	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
[illegible]	[illegible]	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
[illegible]	[illegible]	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
[illegible]	[illegible]	ARC 11-97-87-094 OA161 ORBITER + WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2890.0000	SQ.FT.
LREF	474.8000	IN.
BREF	990.0000	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

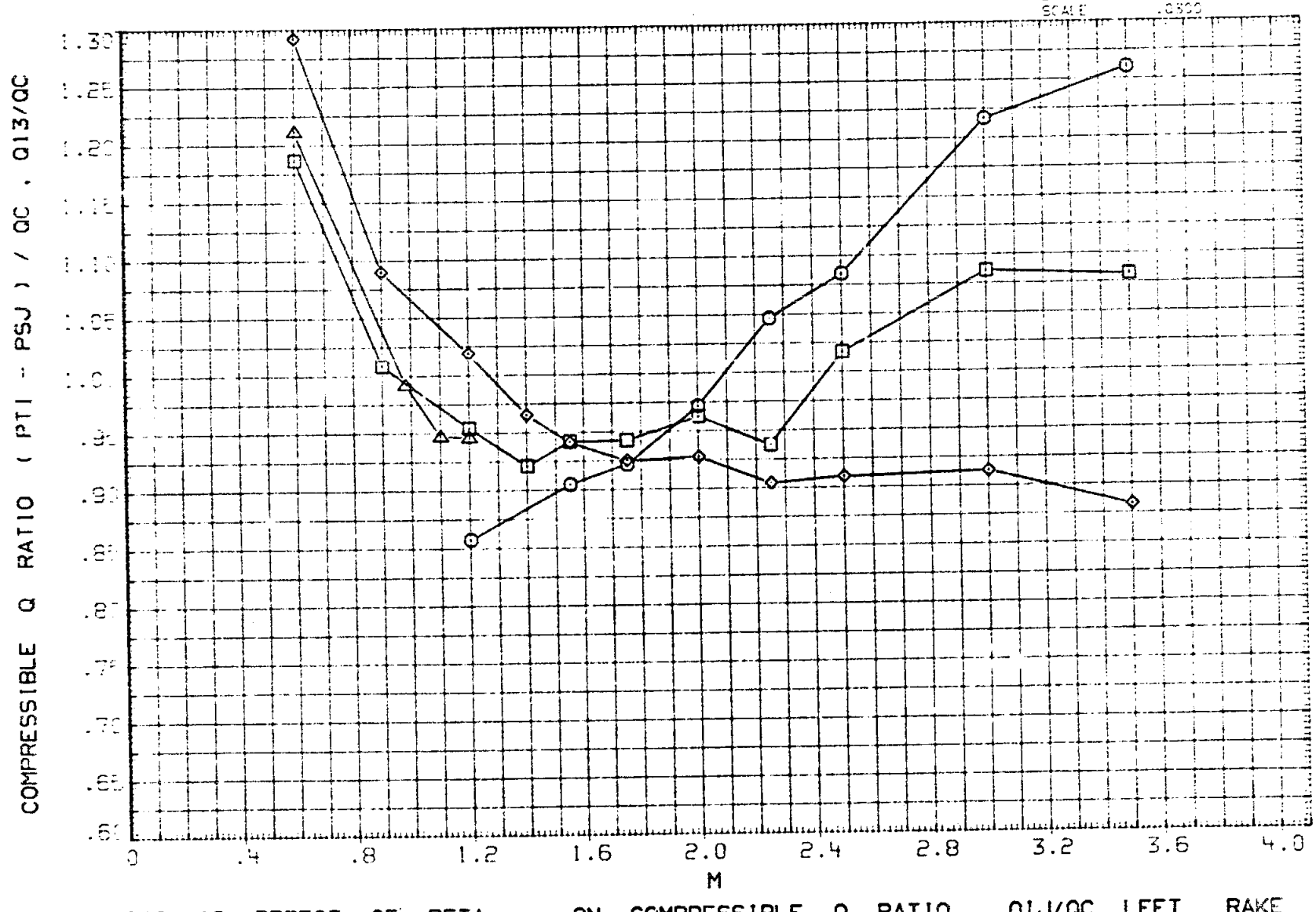


FIG. 19 EFFECT OF BETA ON COMPRESSIBLE Q RATIO Q1J/QC LEFT RAKE

(E)ALPHA = 24.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
[illegible]	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
[illegible]	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
[illegible]	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
[illegible]	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.3300	

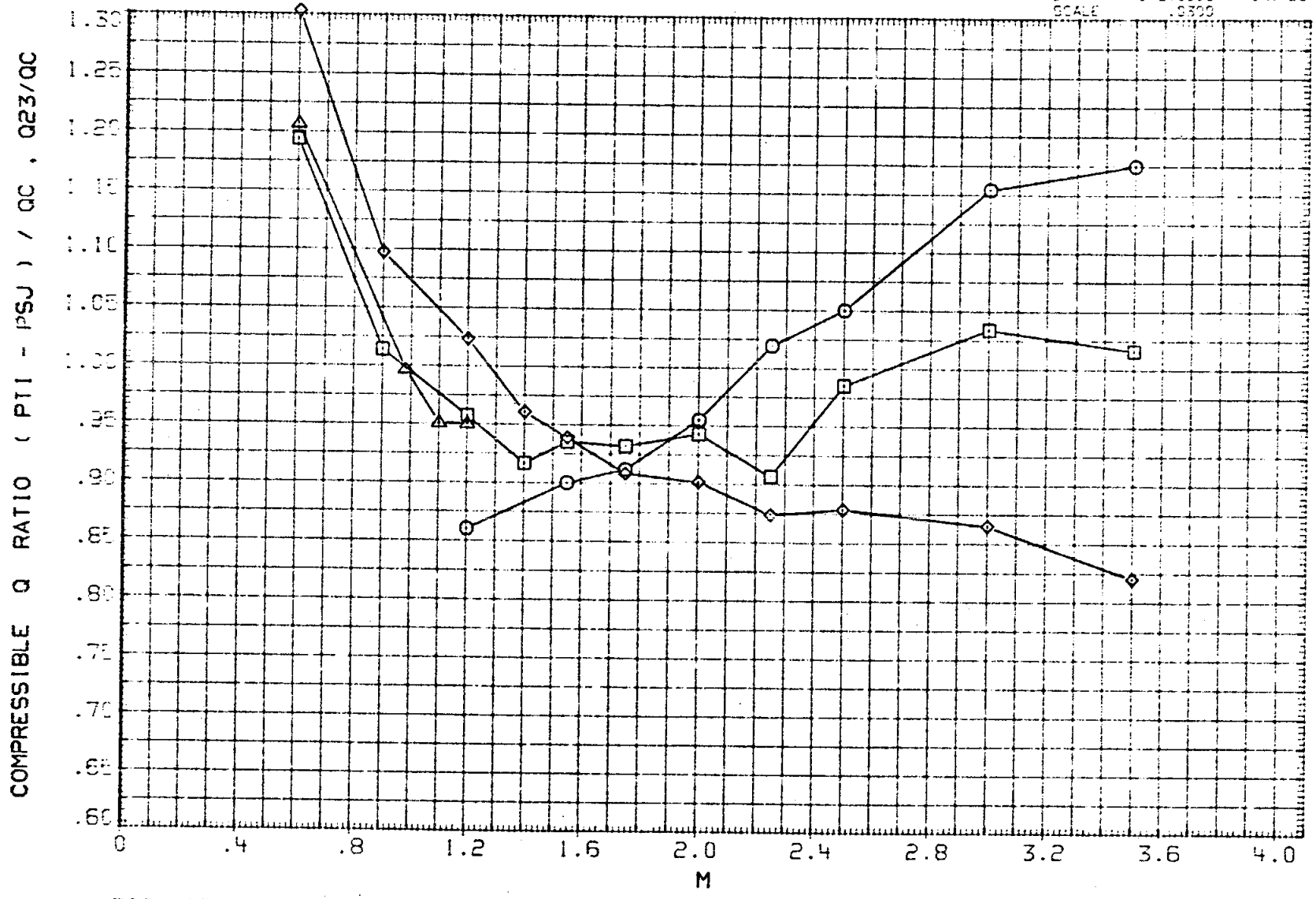


FIG. 19 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

[illegible]ALPHA = 24.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
[illegible]	[illegible]	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
[illegible]	[illegible]	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
[illegible]	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
[illegible]	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	404.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

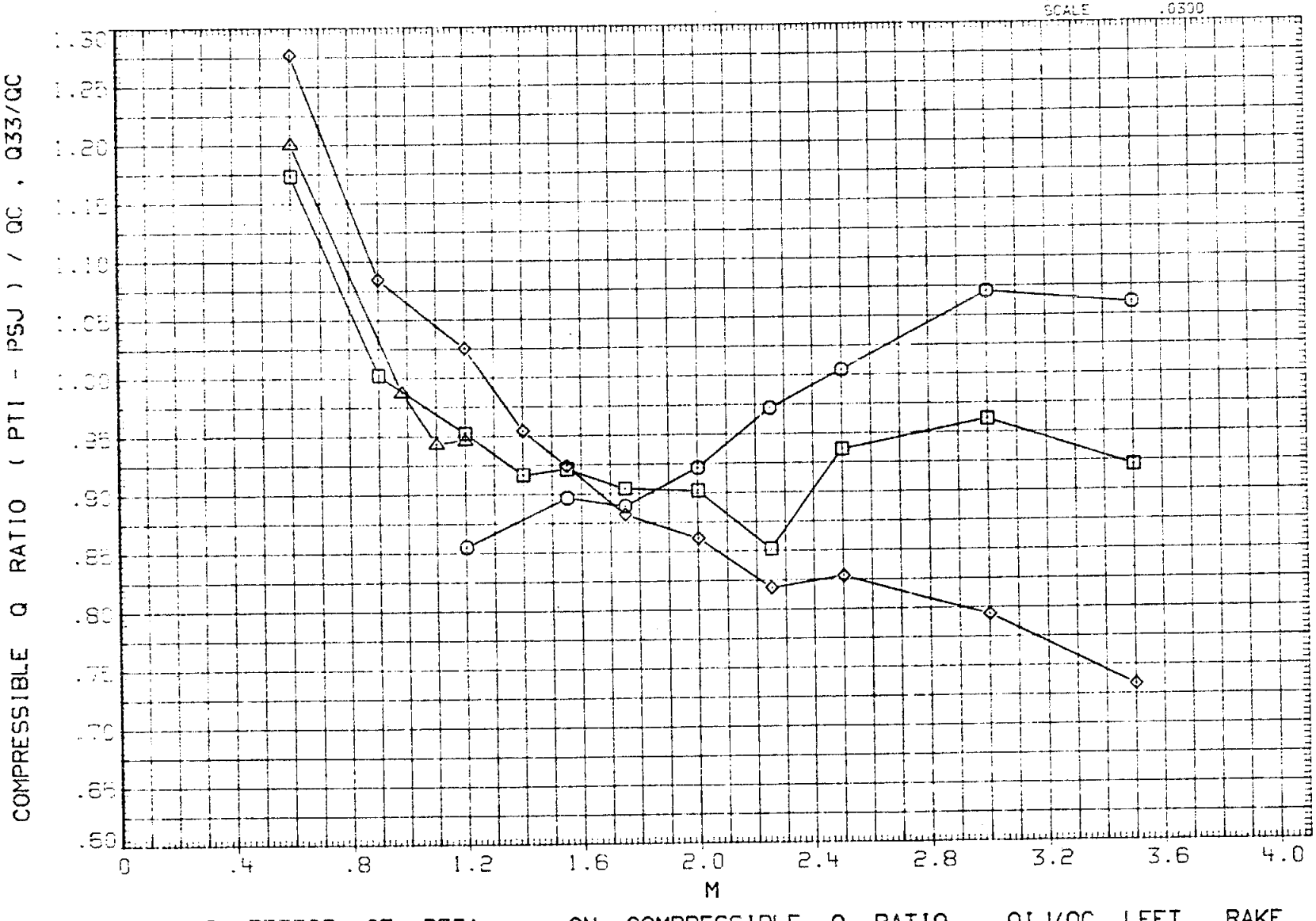


FIG. 19 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC LEFT RAKE

(E) ALPHA = 24.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
AE7B03	○	ARC 11-97-87-094 0A161 ORBITER + RAKES	-5.000	.000	.000	-7.170
AE7B05	□	ARC 11-97-87-094 0A161 ORBITER + RAKES	.000	.000	.000	-7.170
AE7B07	◇	ARC 11-97-87-094 0A161 ORBITER + RAKES	5.000	.000	.000	-7.170
AE7B01	△	ARC 11-97-87-094 0A161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.8300	

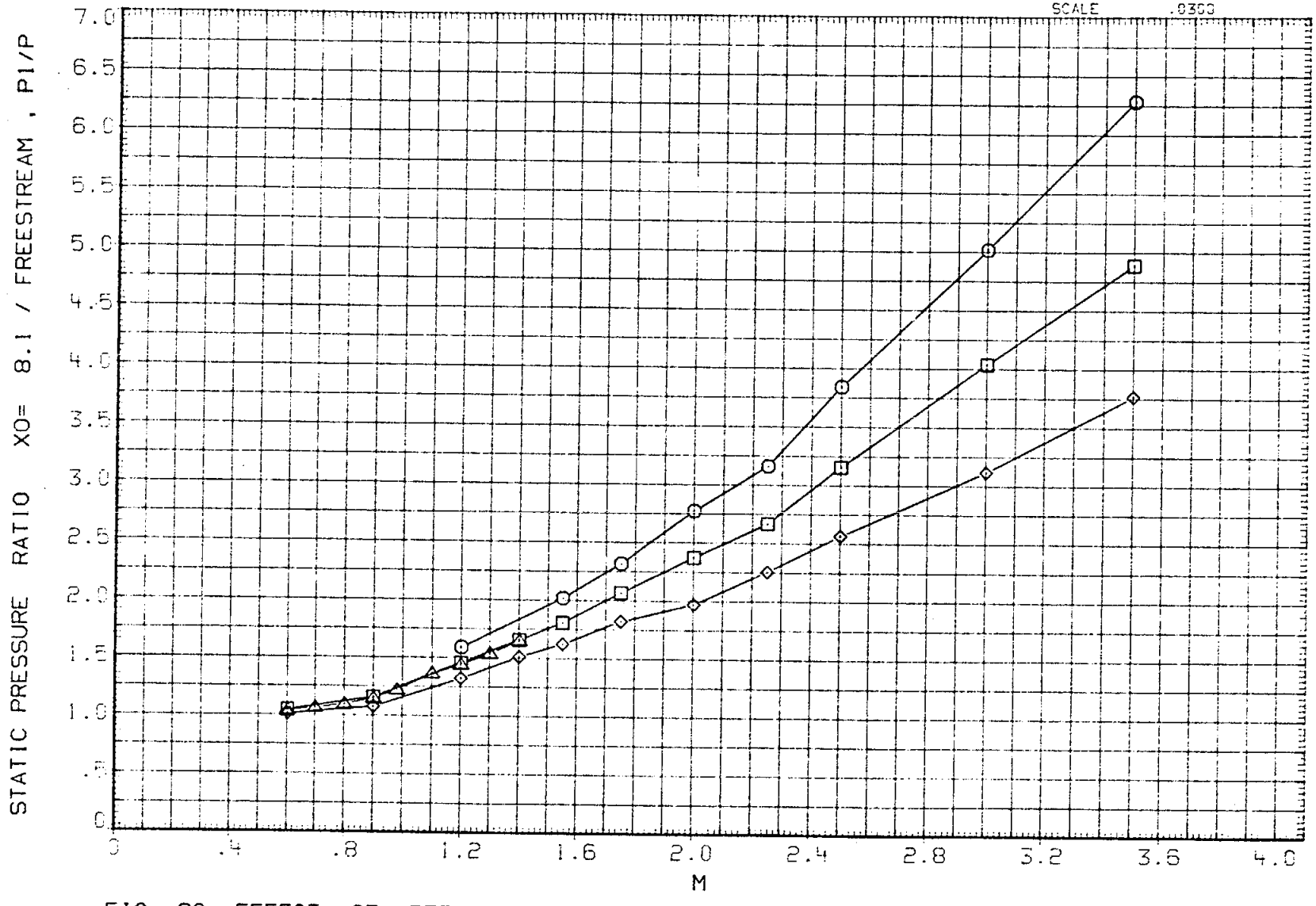


FIG. 20 EFFECT OF BETA ON STATIC PRESSURE RATIO PSJ/P LEFT RAKE

(A) ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
AE78B3	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
AE78B5	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
AE78B7	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
AE78C1	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6900	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

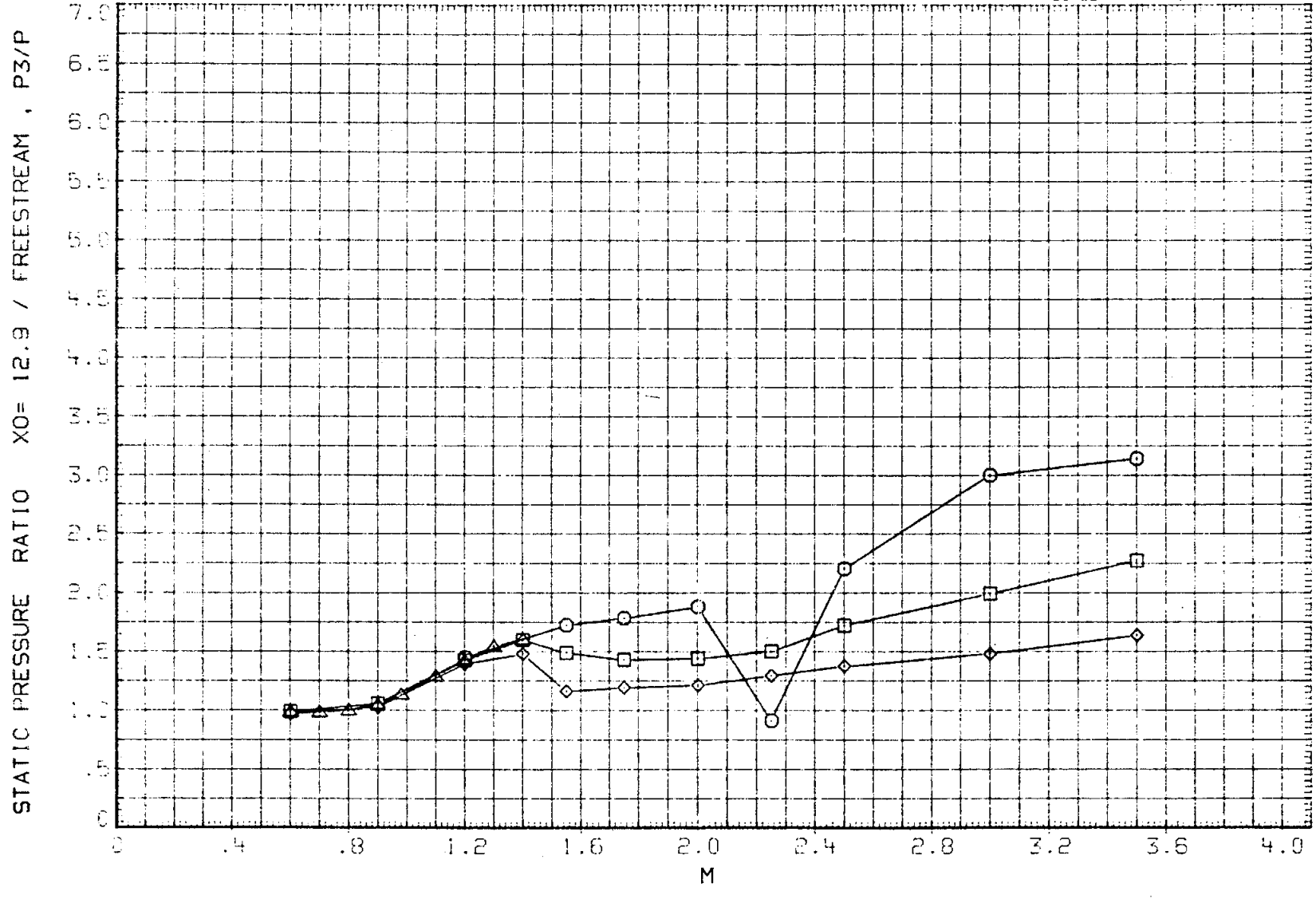


FIG. 20 EFFECT OF BETA ON STATIC PRESSURE RATIO PSJ/P LEFT RAKE

(A) ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
AE76CS	○	ARC 11-97-87-094 0A161 ORBITER + RAKES	-5.000	.000	.000	-7.170
AE76CS	□	ARC 11-97-87-094 0A161 ORBITER + RAKES	.000	.000	.000	-7.170
AE76CS	◇	ARC 11-97-87-094 0A161 ORBITER + RAKES	5.000	.000	.000	-7.170
AE76CS	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

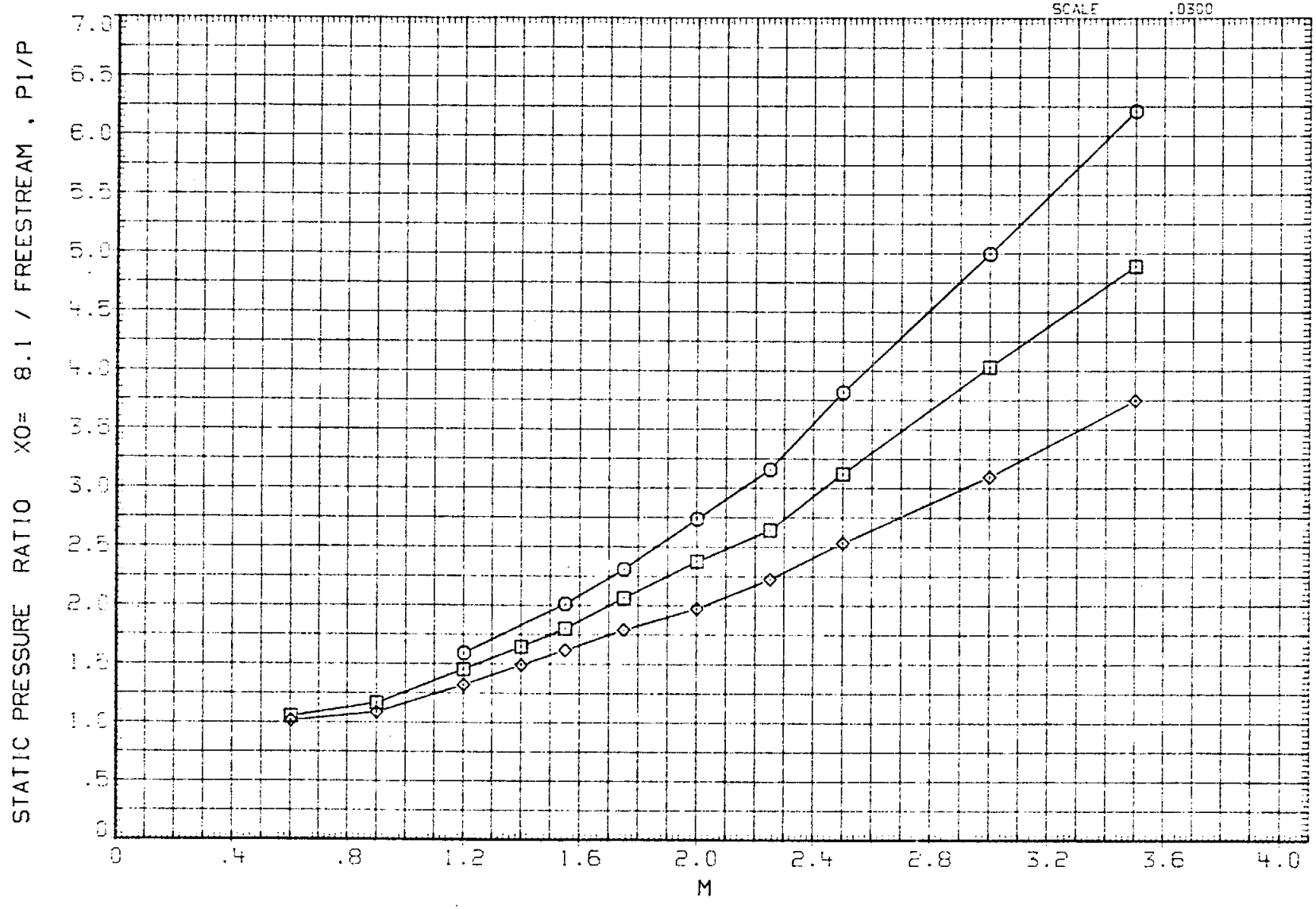


FIG. 20 EFFECT OF BETA ON STATIC PRESSURE RATIO PSJ/P LEFT RAKE

(B) ALPHA = 6.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
E7803	○	ARC 11-97-87-094 0A161 ORBITER + RAKES	-5.000	.000	.000	-7.170
E7805	□	ARC 11-97-87-094 0A161 ORBITER + RAKES	.000	.000	.000	-7.170
E7807	◇	ARC 11-97-87-094 0A161 ORBITER + RAKES	5.000	.000	.000	-7.170
E7801	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.7000	IN. ZO
SCALE	.0300	

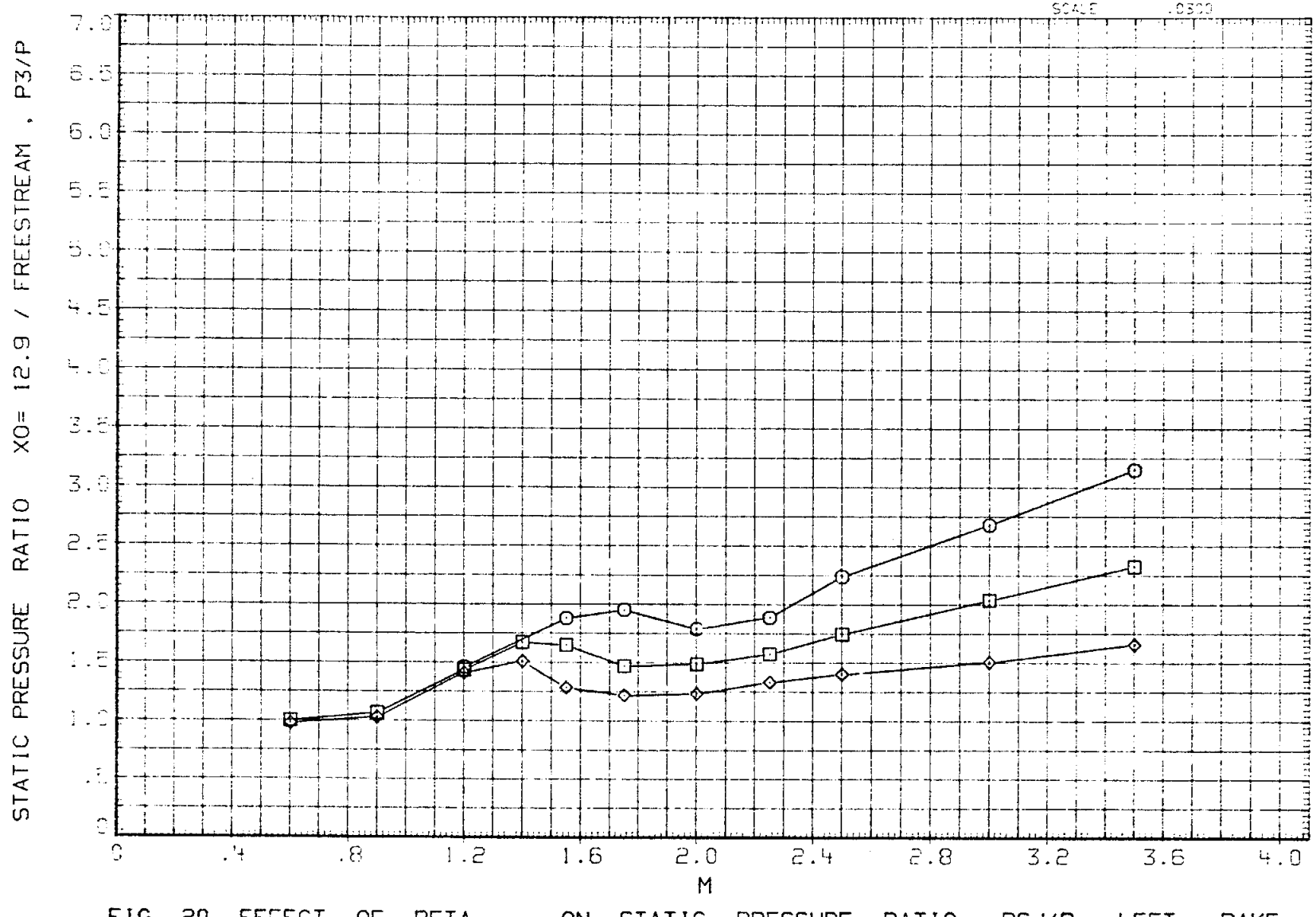


FIG. 20 EFFECT OF BETA ON STATIC PRESSURE RATIO PSJ/P LEFT RAKE

(B)ALPHA = 6.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
AE7B03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
AE7B05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
AE7B07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
AE7B01	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

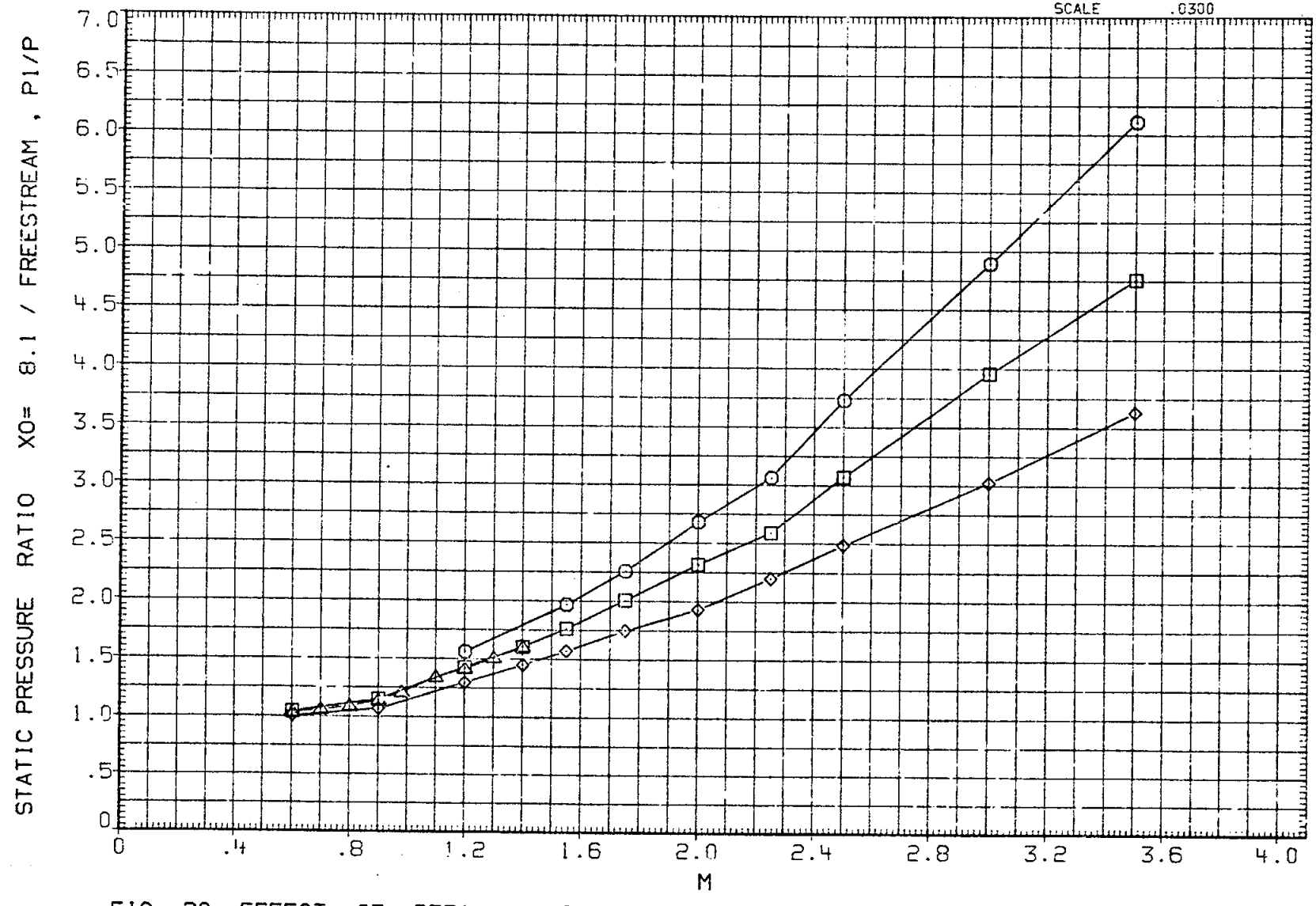


FIG. 20 EFFECT OF BETA ON STATIC PRESSURE RATIO PSJ/P LEFT RAKE

(C) ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
AE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
AE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
AE7807	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
AE7801	△	ARC 11-97-87-094 OA161 ORBITER + WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	935.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

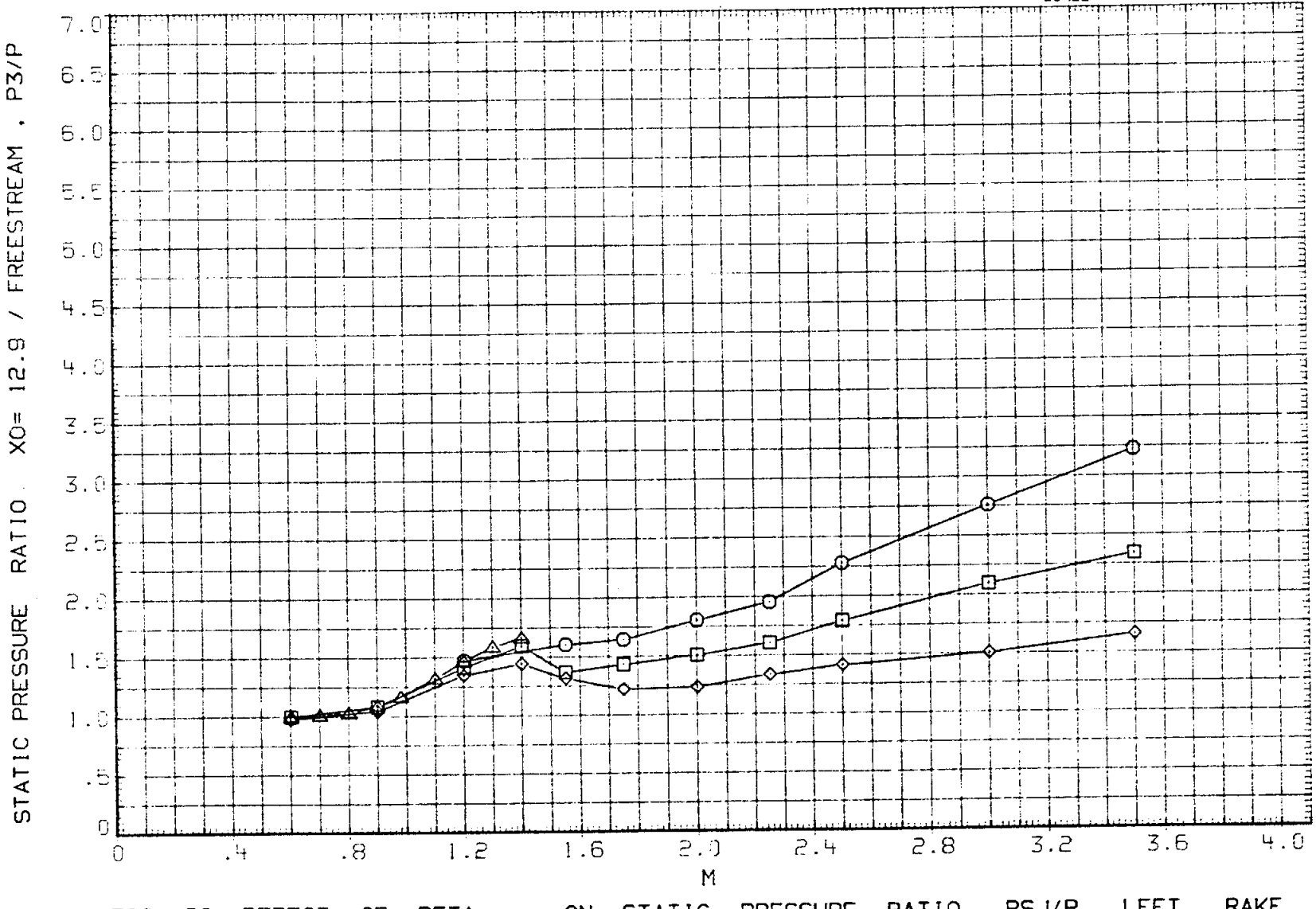


FIG. 20 EFFECT OF BETA ON STATIC PRESSURE RATIO PSJ/P LEFT RAKE

'C)ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
AF7803	○	ARC 11-97-87-094 0A161 ORBITER + RAKES	-5.000	.000	.000	-7.170
AF7805	□	ARC 11-97-87-094 0A161 ORBITER + RAKES	.000	.000	.000	-7.170
AF7807	◇	ARC 11-97-87-094 0A161 ORBITER + RAKES	5.000	.000	.000	-7.170
AF7801	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

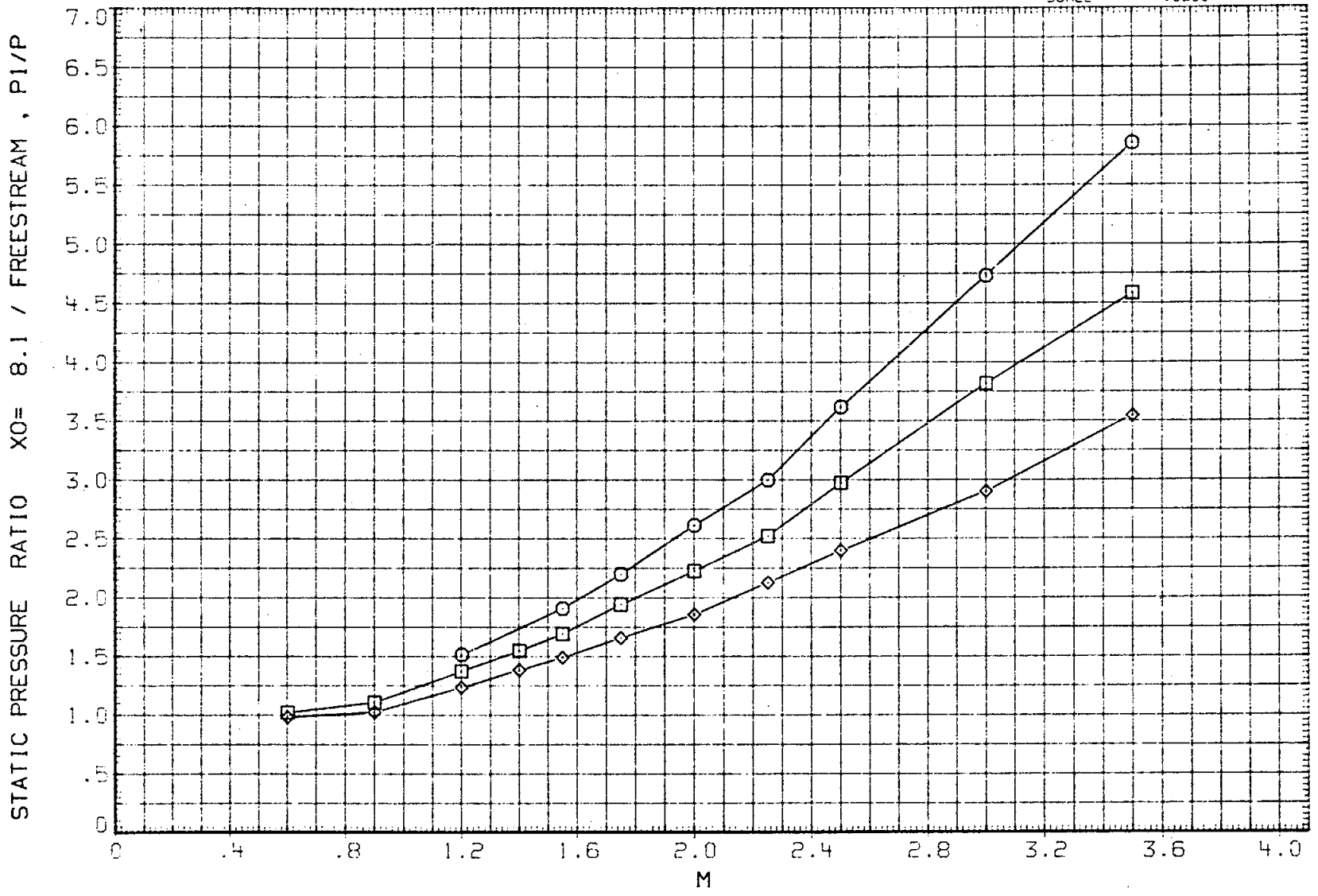


FIG. 20 EFFECT OF BETA ON STATIC PRESSURE RATIO PSJ/P LEFT RAKE

(D) ALPHA = 18.00

DATA SET SYMBOL		CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
AE7B03		ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
AE7B05		ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
AE7B04		ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
AE7B01		DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.3000	SQ.FT.
LREF	474.8000	IN.
BREF	935.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0700	

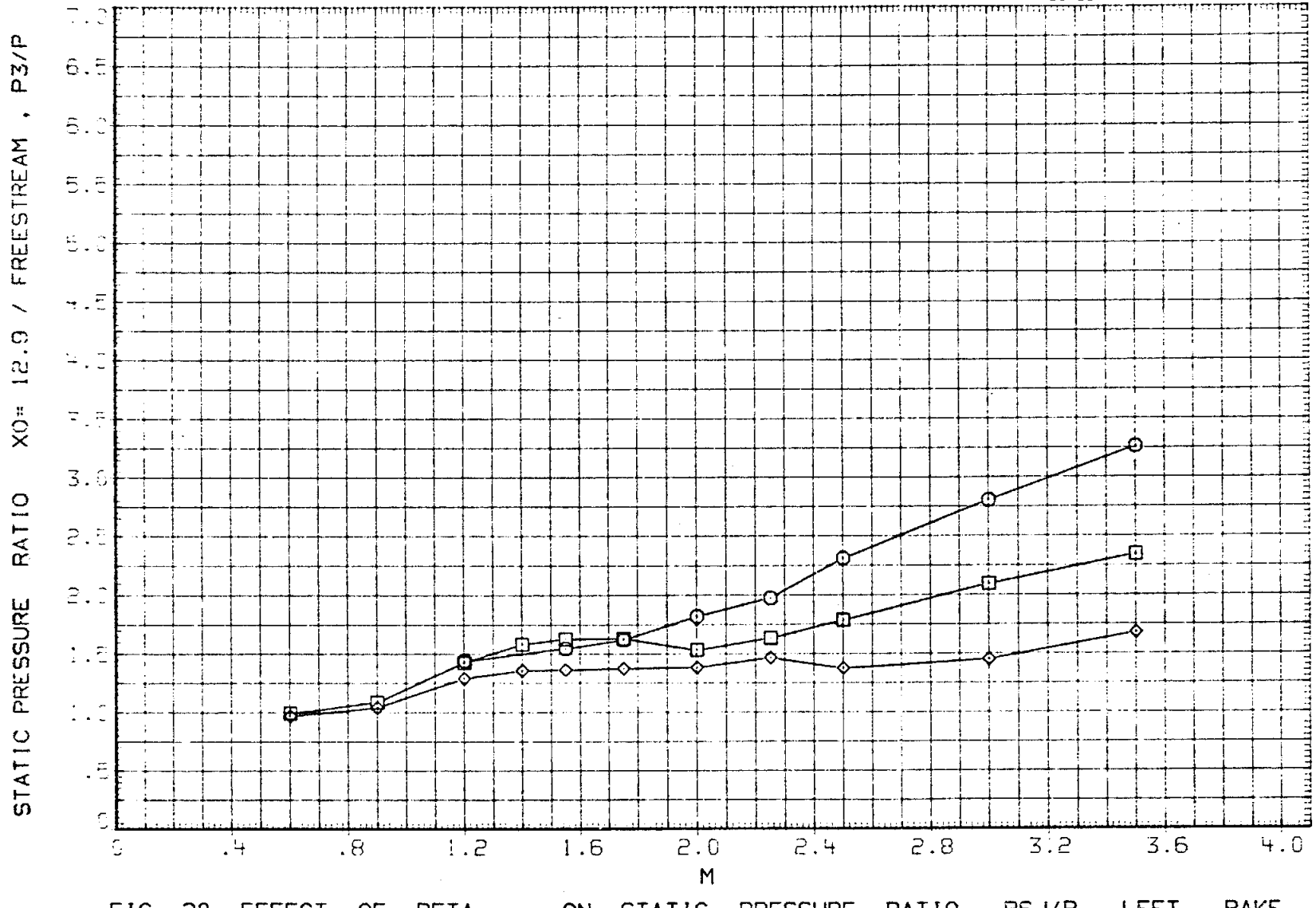


FIG. 20 EFFECT OF BETA ON STATIC PRESSURE RATIO PSJ/P LEFT RAKE

(D)ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
AE7B03	○	ARC 11-97-87-094 0A161 ORBITER + RAKES	-5.000	.000	.000	-7.170
AE7B04	□	ARC 11-97-87-094 0A161 ORBITER + RAKES	.000	.000	.000	-7.170
AE7B05	△	ARC 11-97-87-094 0A161 ORBITER + RAKES	5.000	.000	.000	-7.170
AE7B01	◇	ARC 11-97-87-094 0A161 ORBITER + WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

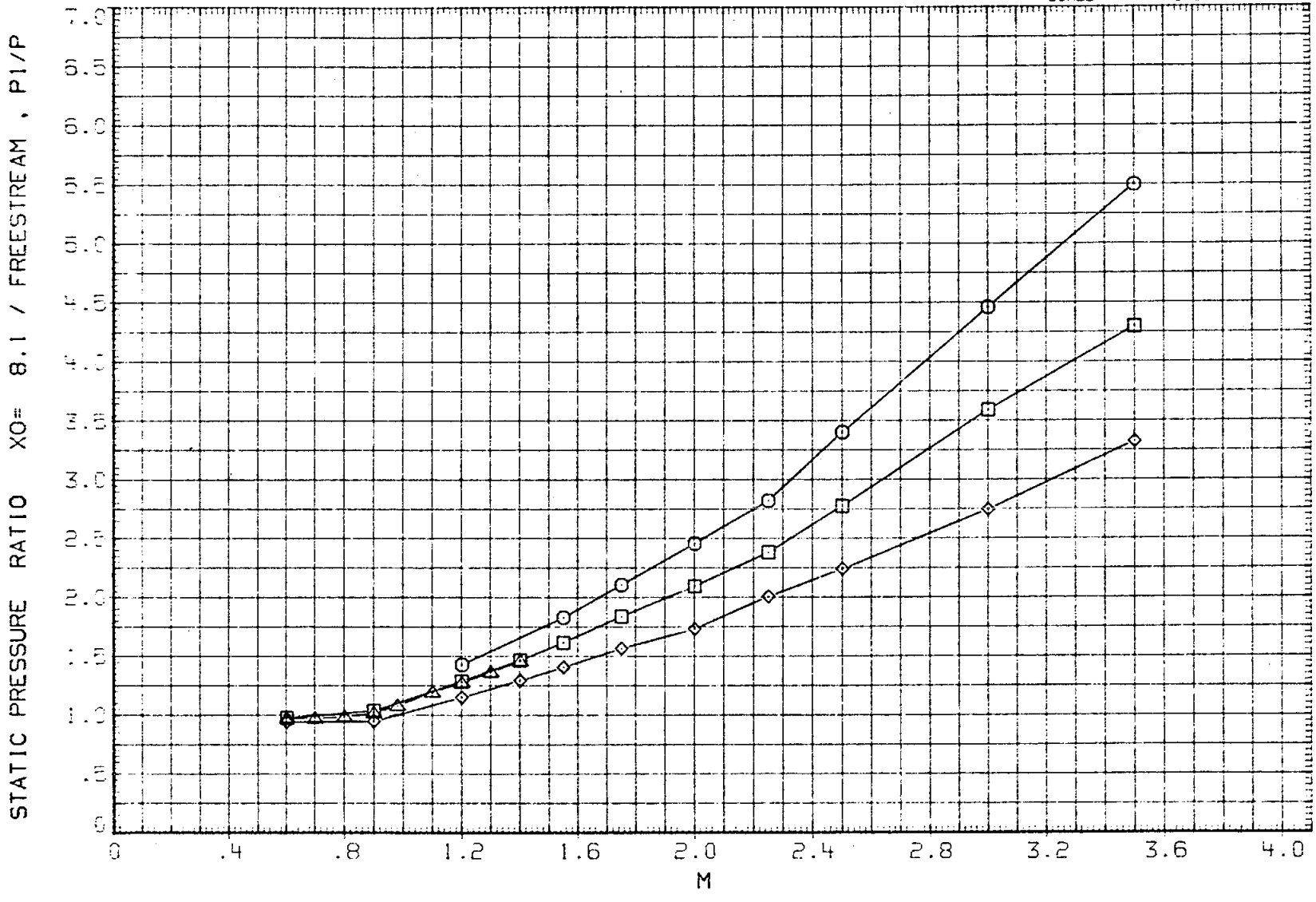


FIG. 20 EFFECT OF BETA ON STATIC PRESSURE RATIO PSJ/P LEFT RAKE

(E) ALPHA = 24.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	RDFLAP
AE7833		ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
AE7835		ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
AE7837		ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
AE7801		ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	336.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

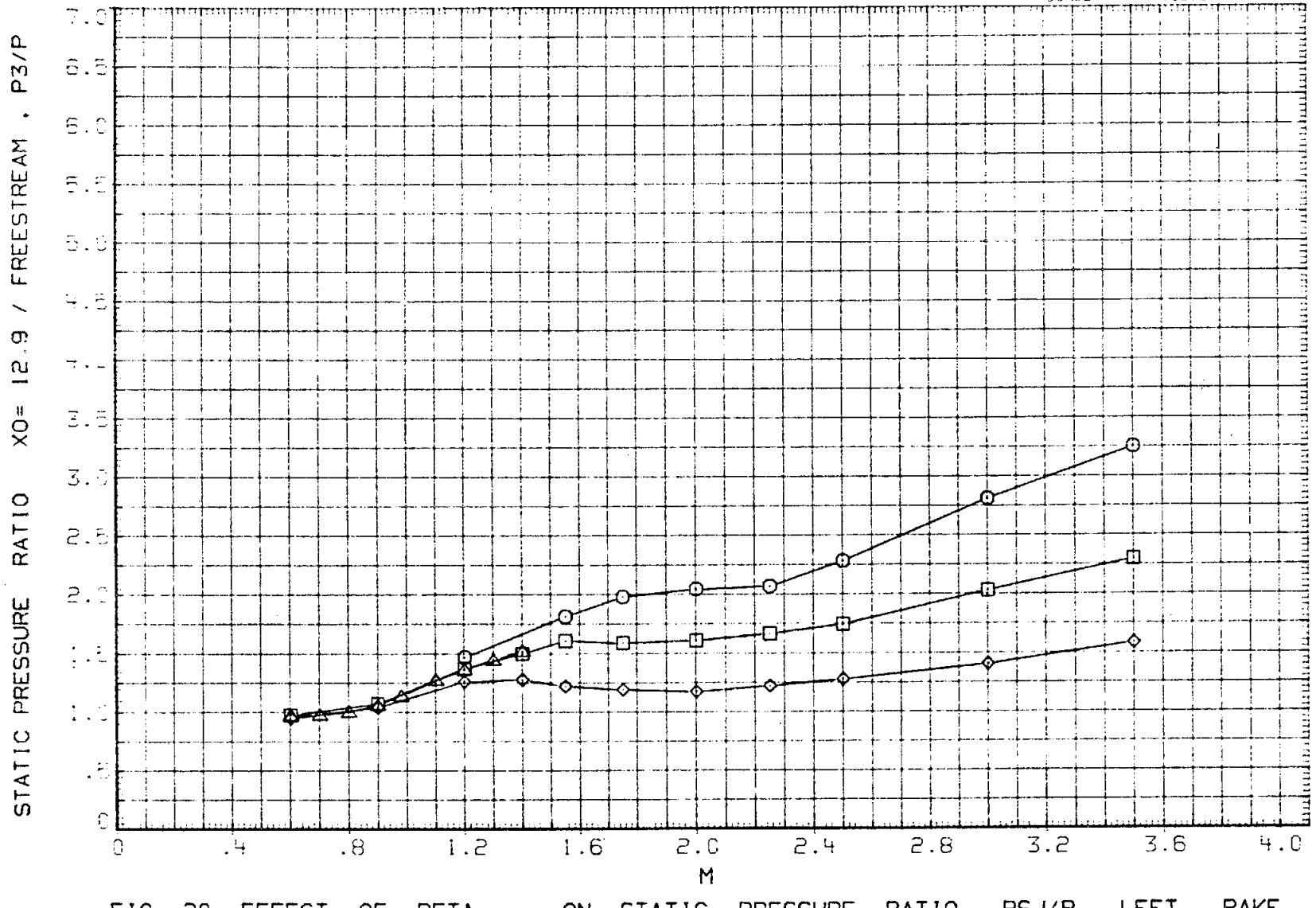


FIG. 20 EFFECT OF BETA ON STATIC PRESSURE RATIO PSJ/P LEFT RAKE

(E)ALPHA = 24.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
BE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
BE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
BE7807	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
BE7801	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

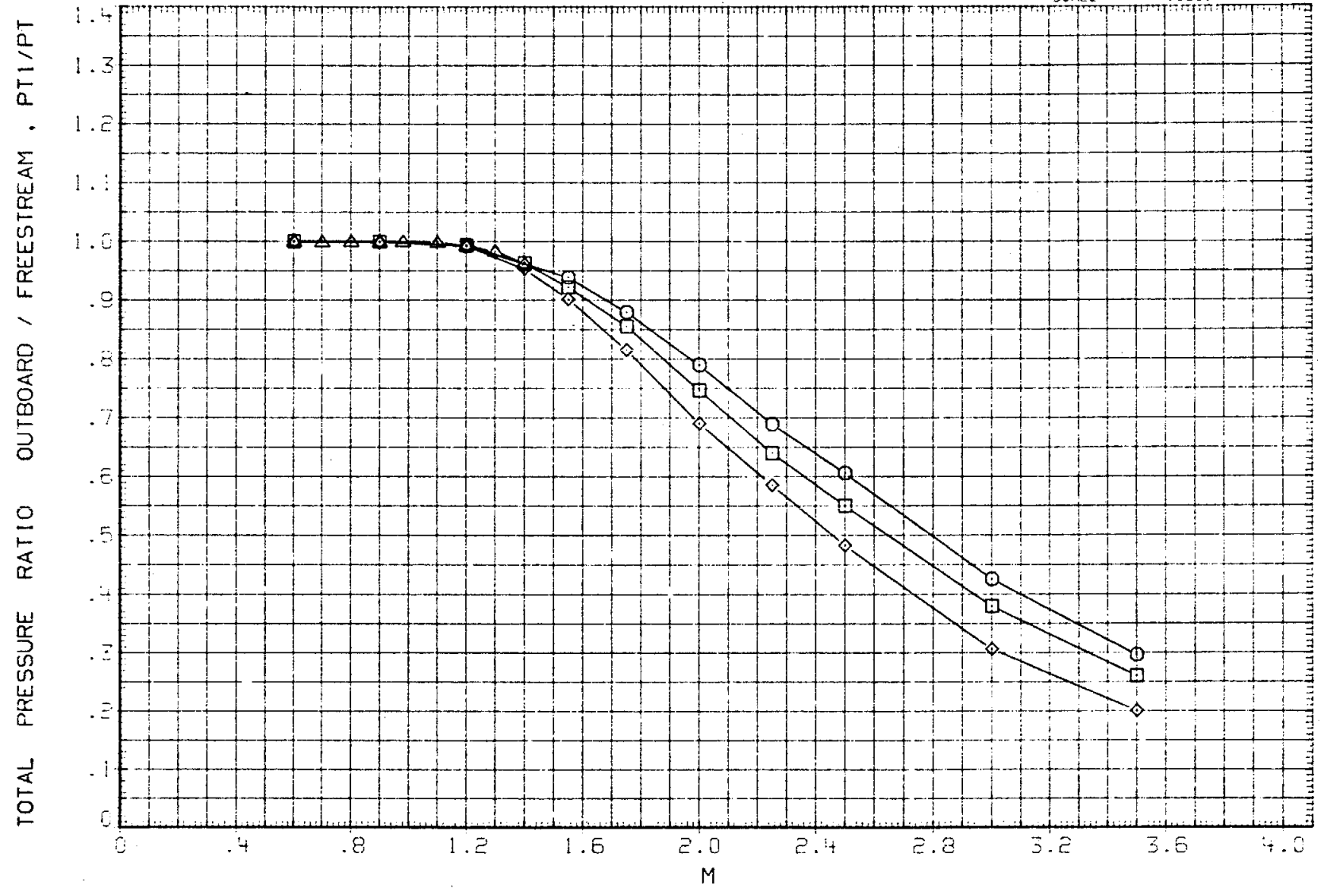


FIG. 21 EFFECT OF BETA ON TOTAL PRESSURE RATIO PTI/PT LEFT RAKE

(A) ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
BET805	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
BET805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
BET805	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
BET805	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	674.8000	IN.
BREF	936.6800	IN.
XMRP	1078.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

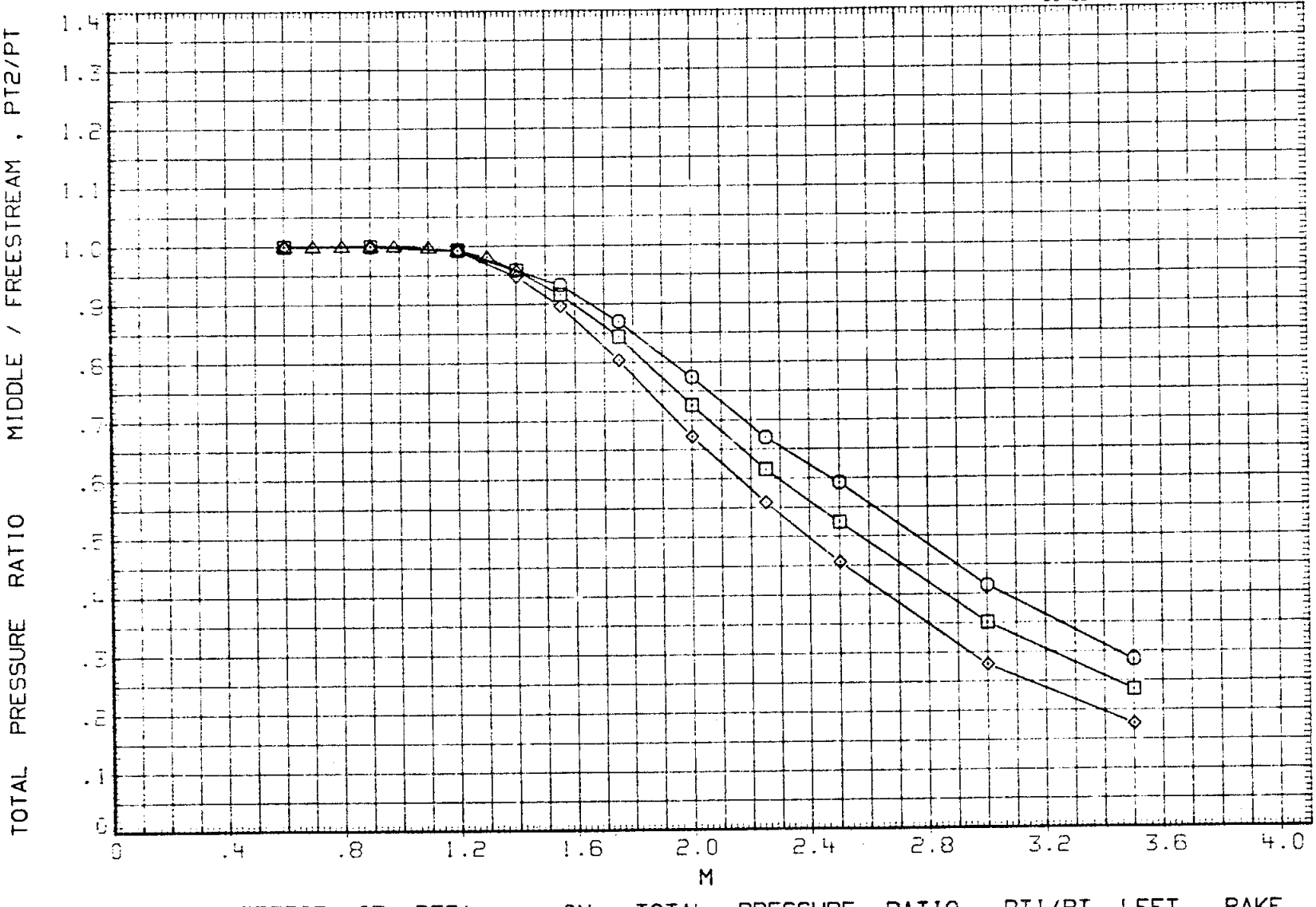


FIG. 21 EFFECT OF BETA ON TOTAL PRESSURE RATIO PTI/PT LEFT RAKE

(A) ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
[illegible]	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
[illegible]	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
[illegible]	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
BETB01	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

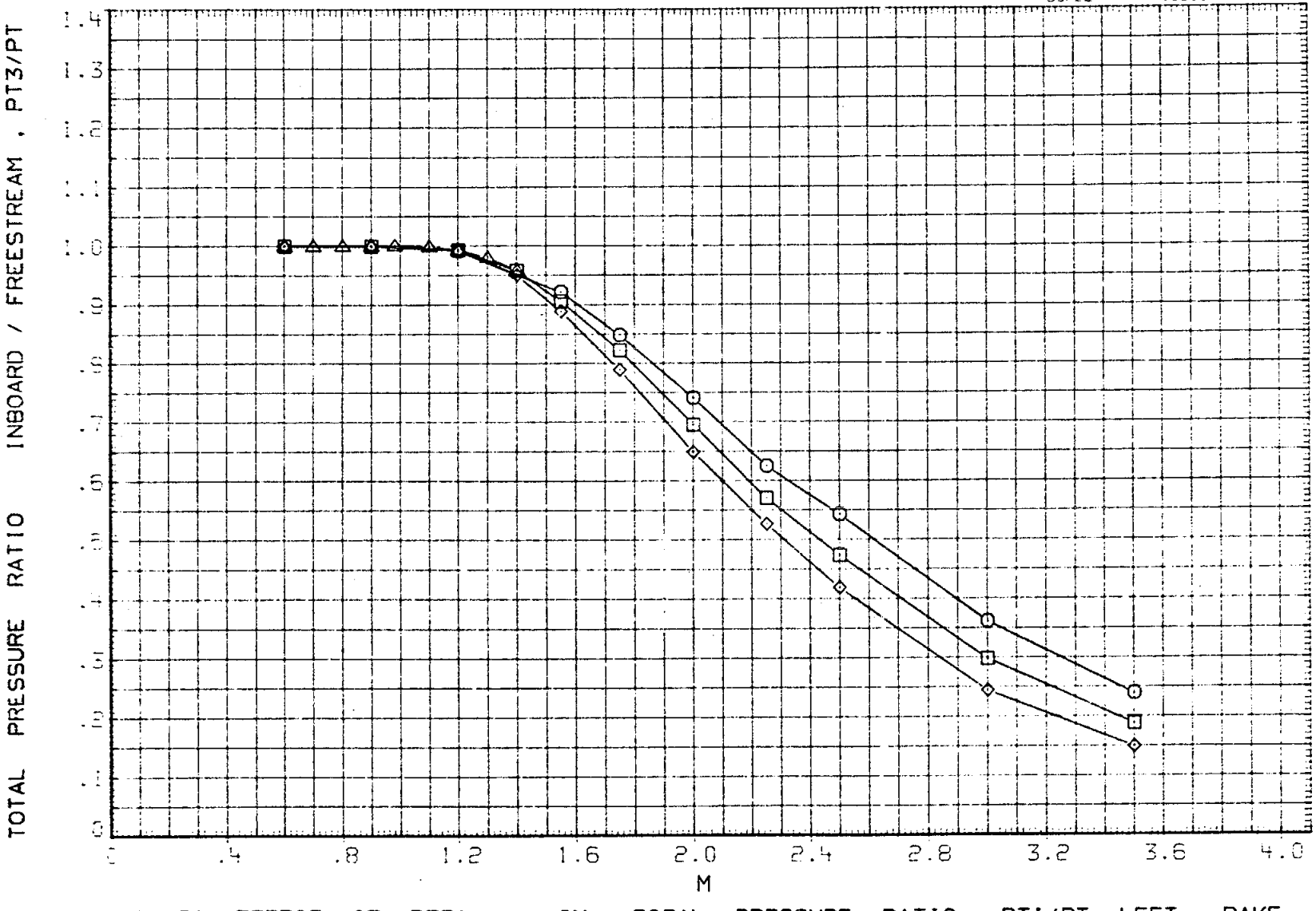


FIG. 21 EFFECT OF BETA ON TOTAL PRESSURE RATIO PTI/PT LEFT RAKE

(A) ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
[illegible]	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
[illegible]	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
[illegible]	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
[illegible]	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

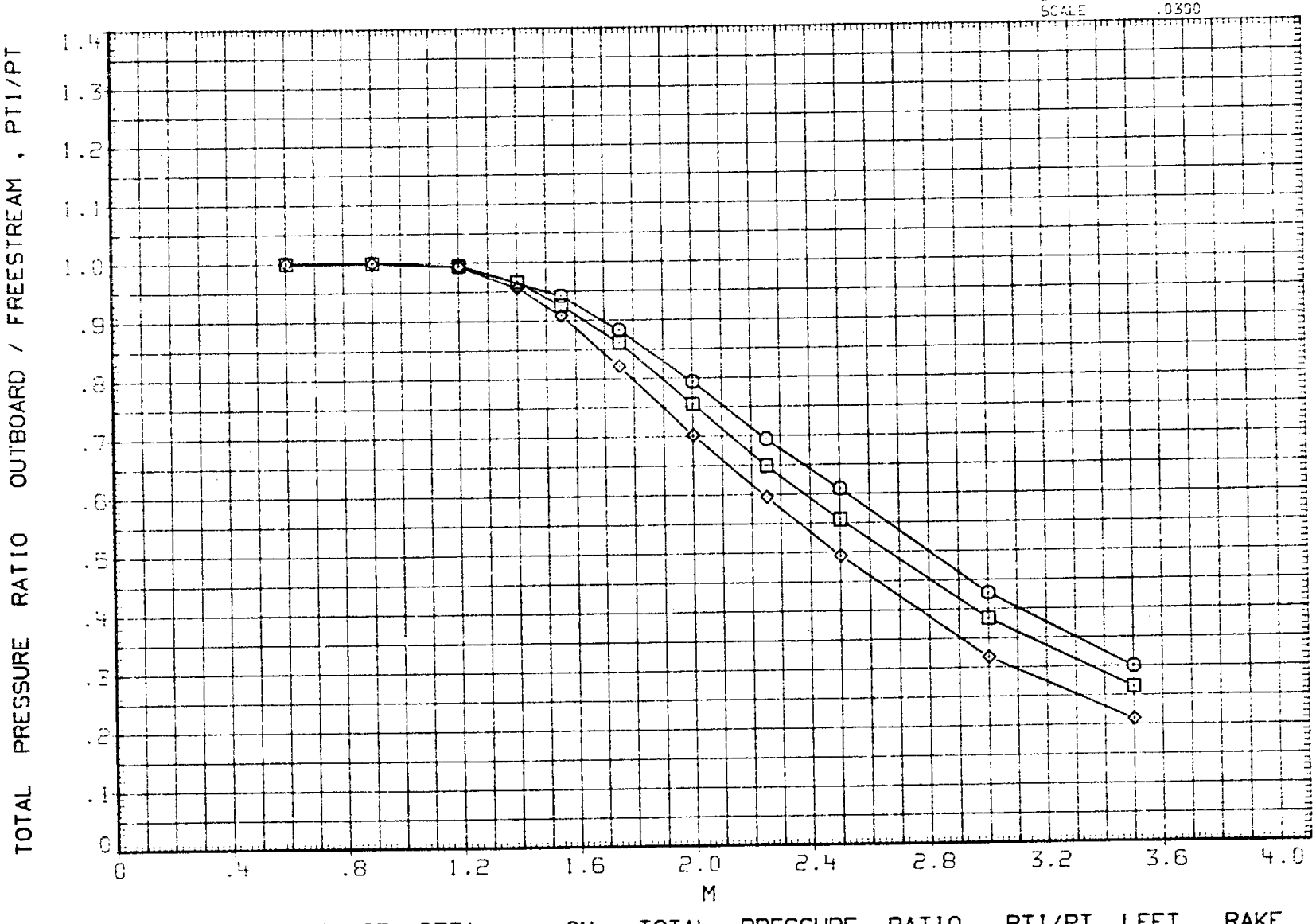


FIG. 21 EFFECT OF BETA ON TOTAL PRESSURE RATIO PTI/PT LEFT RAKE

(B)ALPHA = 6.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
BE7B03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
BE7B05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
BE7B07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
BE7B01	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

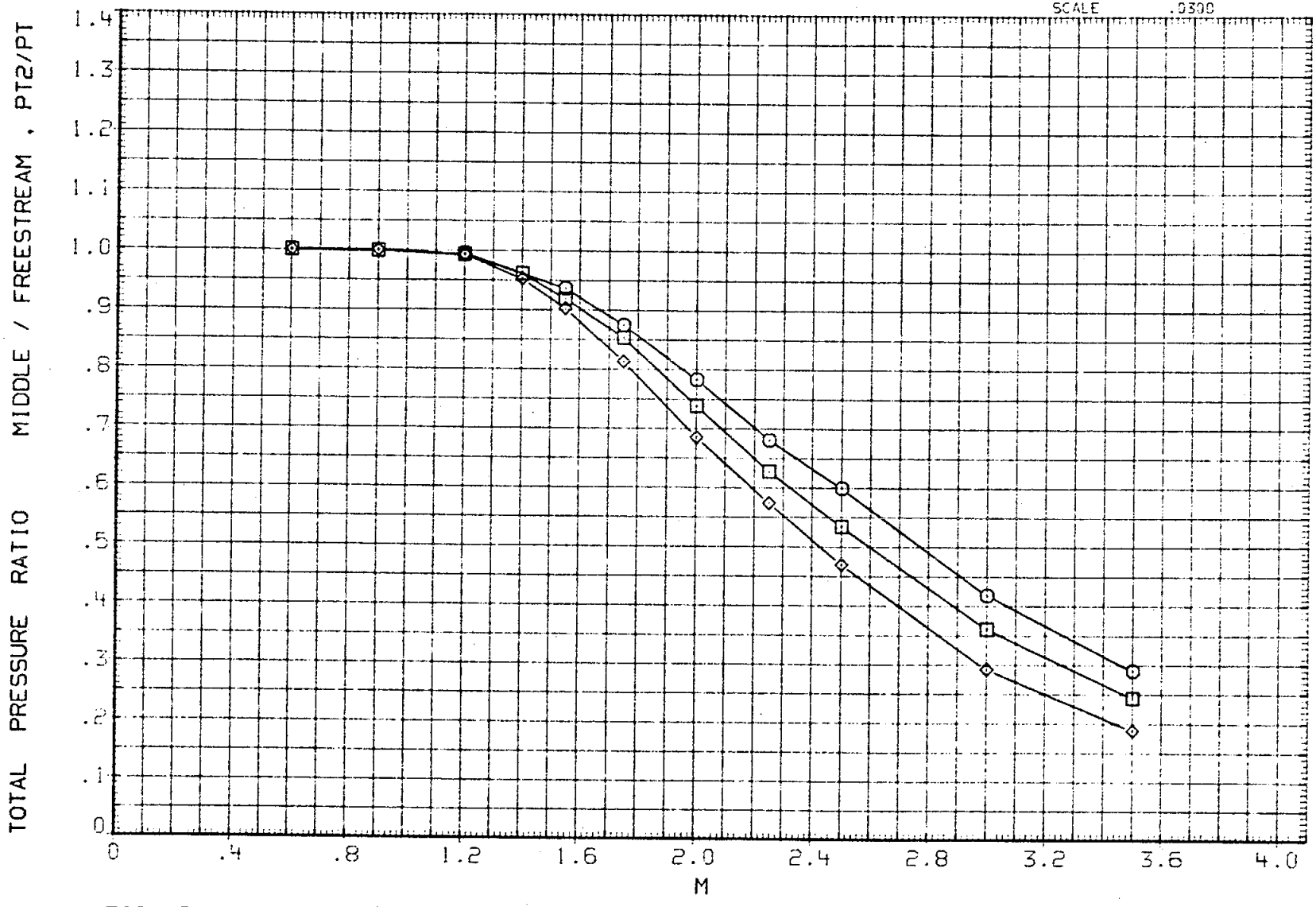


FIG. 21 EFFECT OF BETA ON TOTAL PRESSURE RATIO PTI/PT LEFT RAKE

(B) ALPHA = 6.00

DATA SET	SYMBOL	CONFIGURATION
BE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES
BE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES
BE7807	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES
BE7801	△	DATA NOT AVAILABLE

BETA	ELEVON	AILRON	BDFLAP
-5.000	.000	.000	-7.170
.000	.000	.000	-7.170
5.000	.000	.000	-7.170
.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.5800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

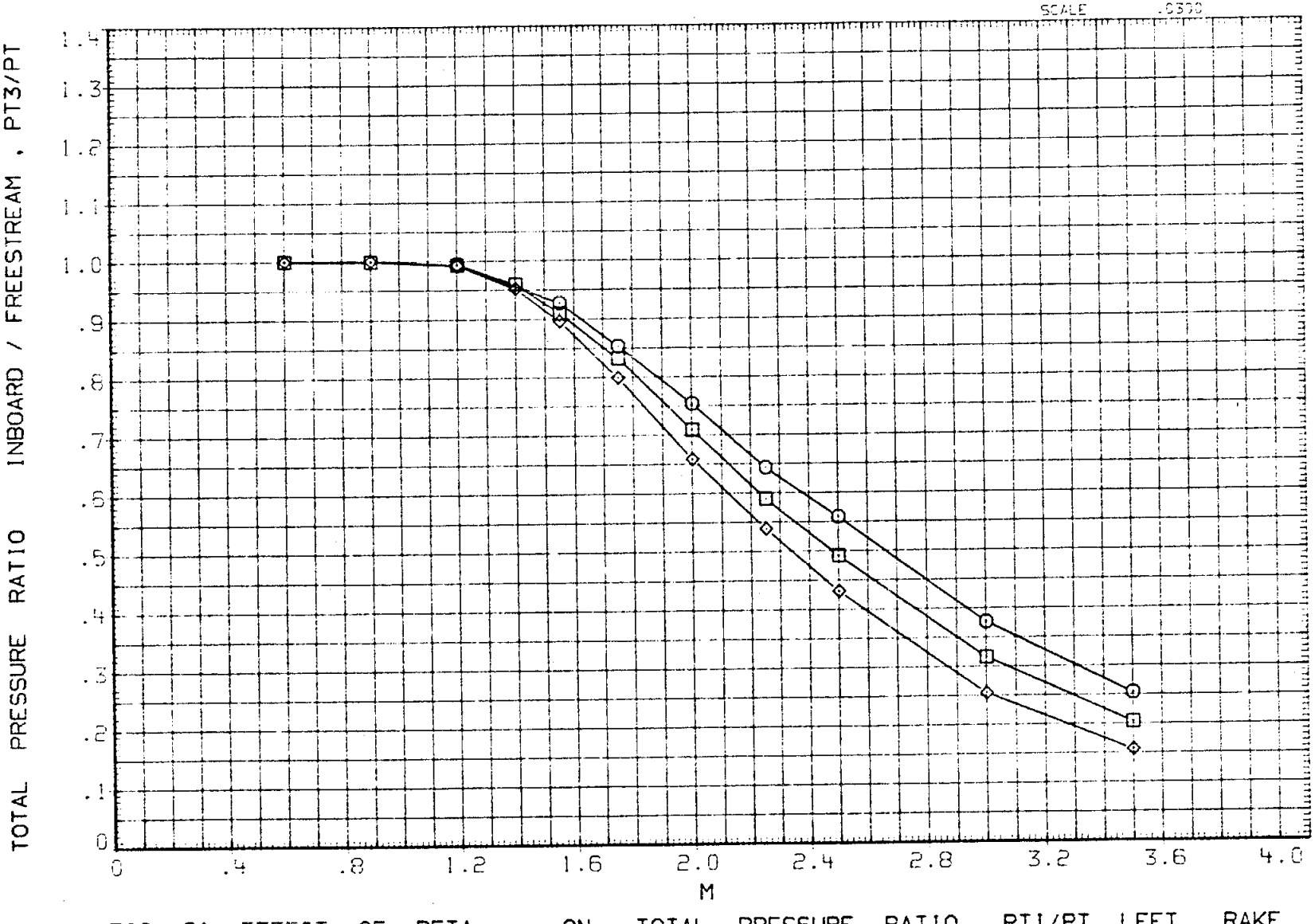


FIG. 21 EFFECT OF BETA ON TOTAL PRESSURE RATIO PTI/PT LEFT RAKE

(B)ALPHA = 6.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
BE7B03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
BE7B05	◇□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
BE7B07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
BE7B01	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

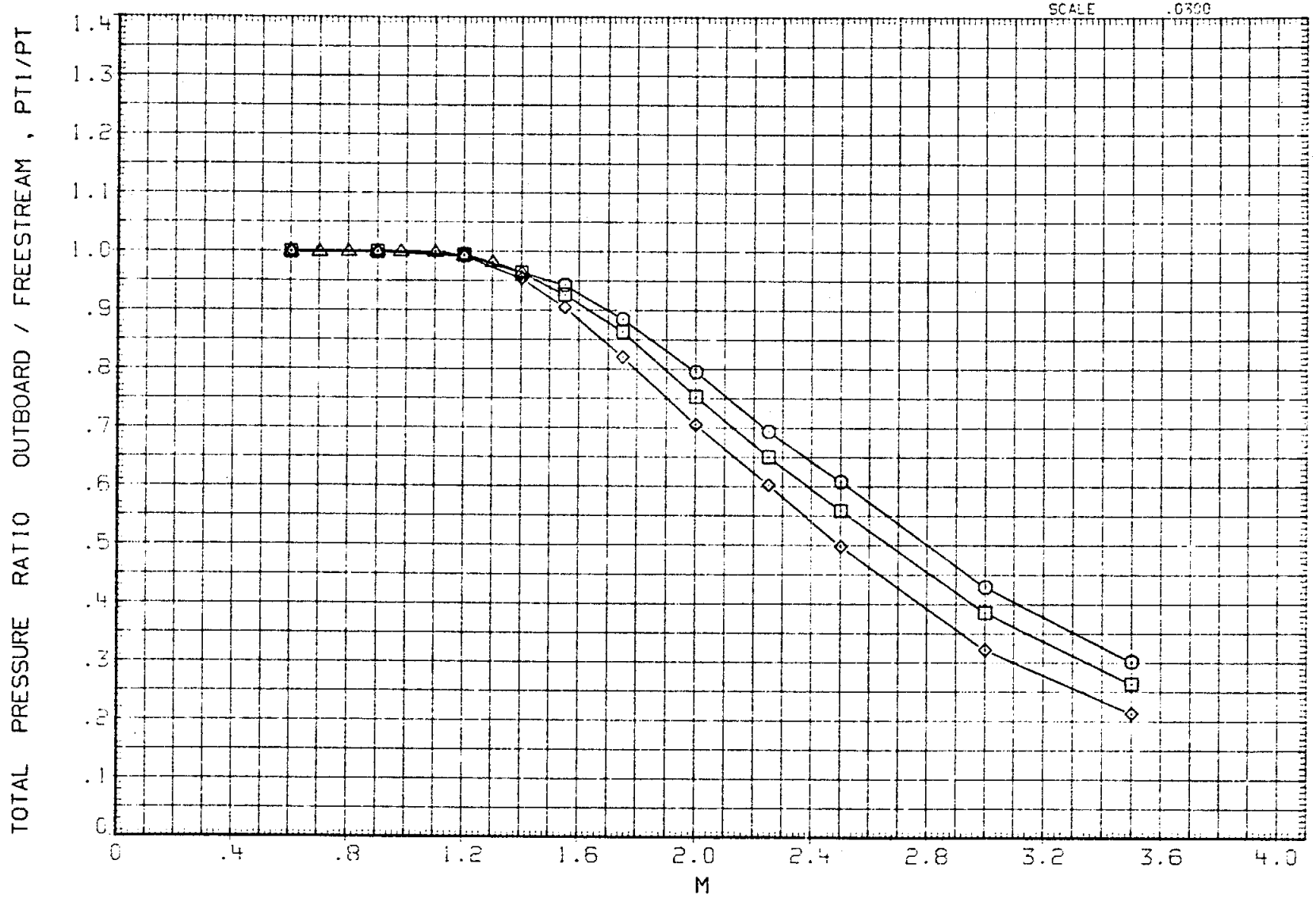


FIG. 21 EFFECT OF BETA ON TOTAL PRESSURE RATIO PTI/PT LEFT RAKE

(C)ALPHA = 12.00

DATA SET SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
▷◁○□	ARC 11-97-87-094 OA161 ORBITER + WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6900	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

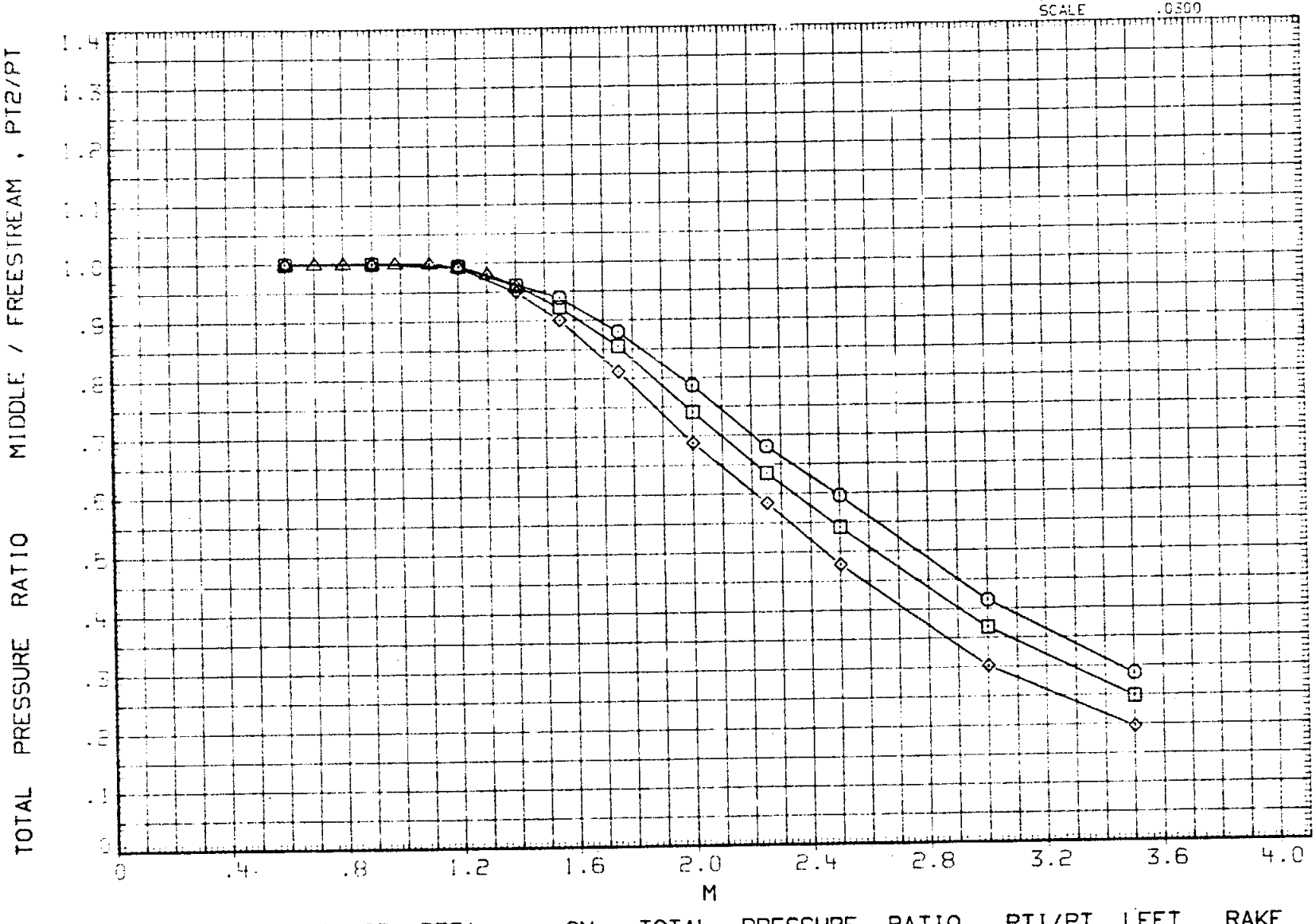


FIG. 21 EFFECT OF BETA ON TOTAL PRESSURE RATIO PTI/PT LEFT RAKE

C ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
[illegible]	○	ARC 11-97-87-094 0A161 ORBITER + RAKES	-5.000	.000	.000	-7.170
[illegible]	□	ARC 11-97-87-094 0A161 ORBITER + RAKES	.000	.000	.000	-7.170
[illegible]	◇	ARC 11-97-87-094 0A161 ORBITER + RAKES	5.000	.000	.000	-7.170
[illegible]	△	ARC 11-97-87-094 0A161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

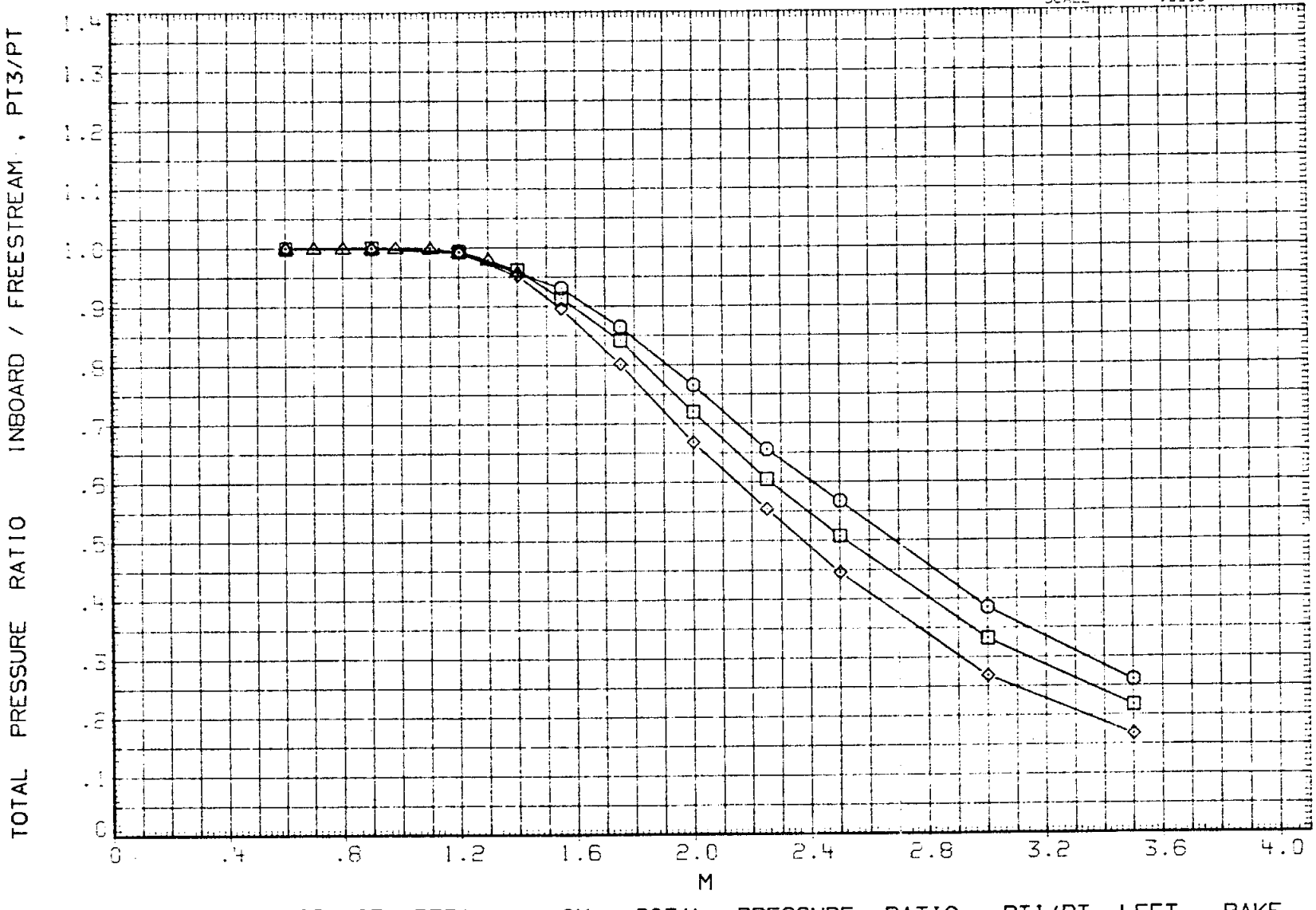


FIG. 21 EFFECT OF BETA ON TOTAL PRESSURE RATIO PTI/PT LEFT RAKE

(C)ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDYLAP
B[illegible]803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
B[illegible]806	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
B[illegible]801	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
B[illegible]801	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.9300	

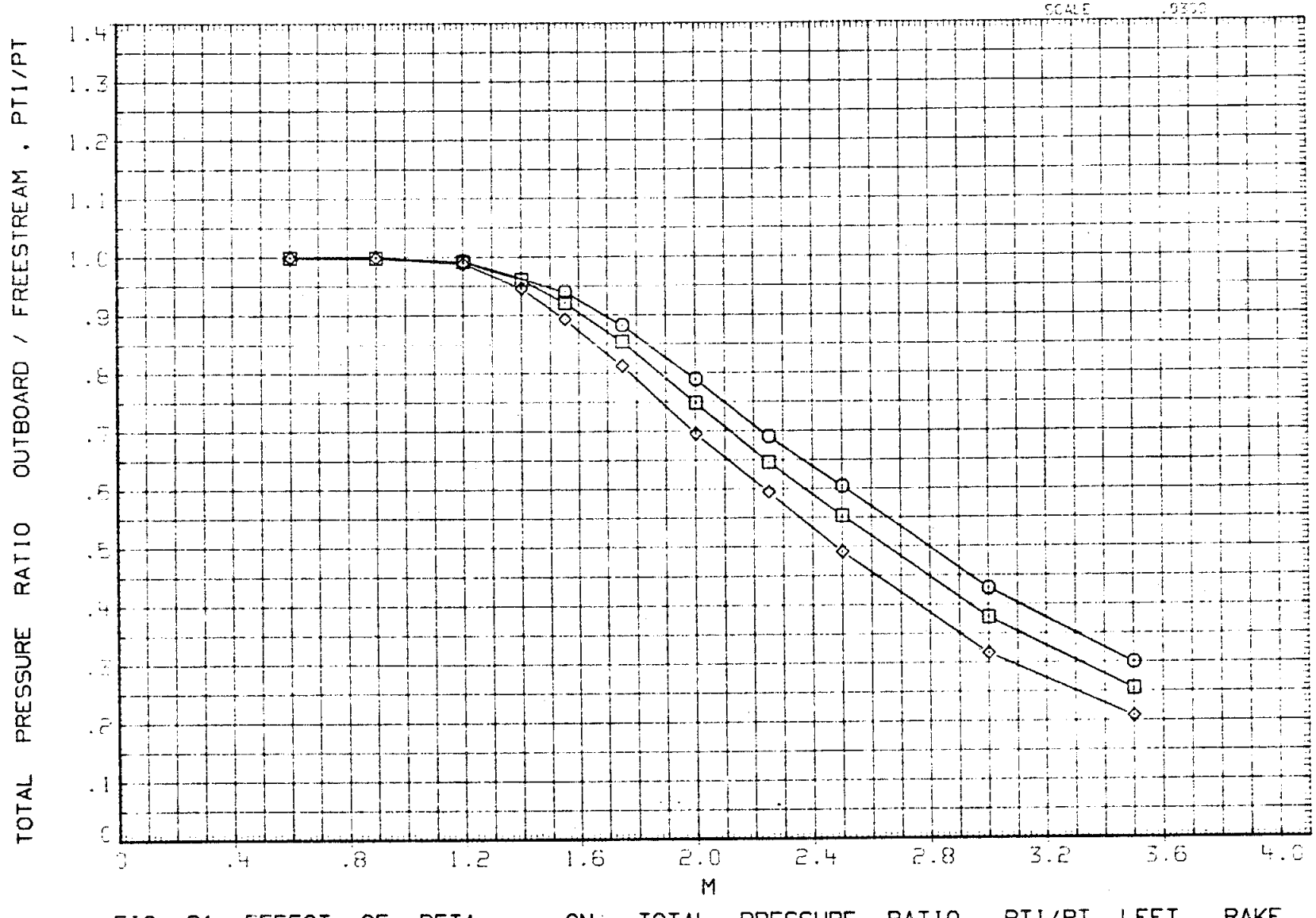


FIG. 21 EFFECT OF BETA ON TOTAL PRESSURE RATIO PTI/PT LEFT RAKE

(D)ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
BET803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
BET805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
BET807	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
BET801	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

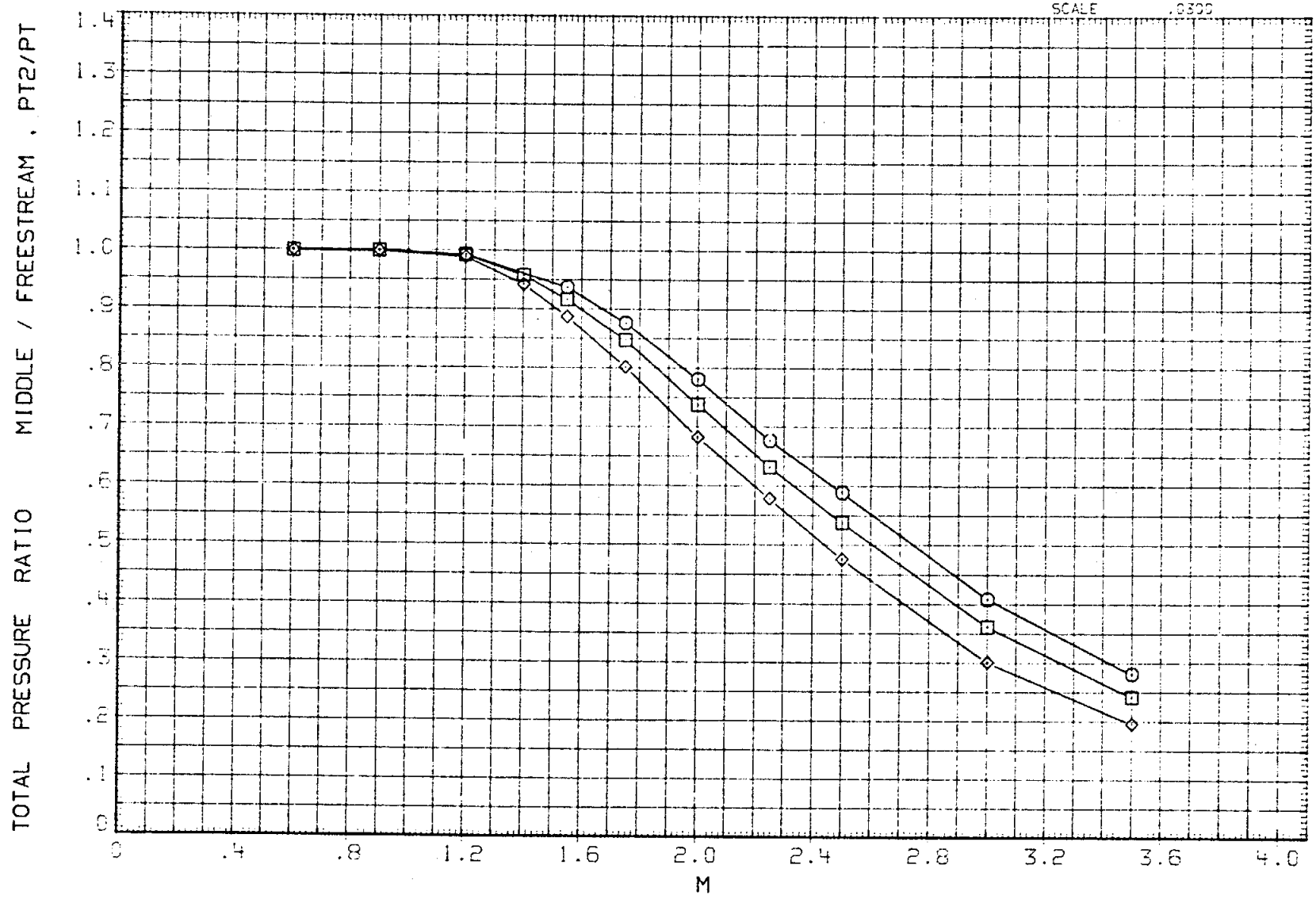


FIG. 21 EFFECT OF BETA ON TOTAL PRESSURE RATIO PTI/PT LEFT RAKE

(D) ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
[illegible]	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
[illegible]	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
[illegible]	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
[illegible]	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	935.6800	IN.
XMRP	1076.6600	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.1000	IN. ZO
SCALE	1.0000	

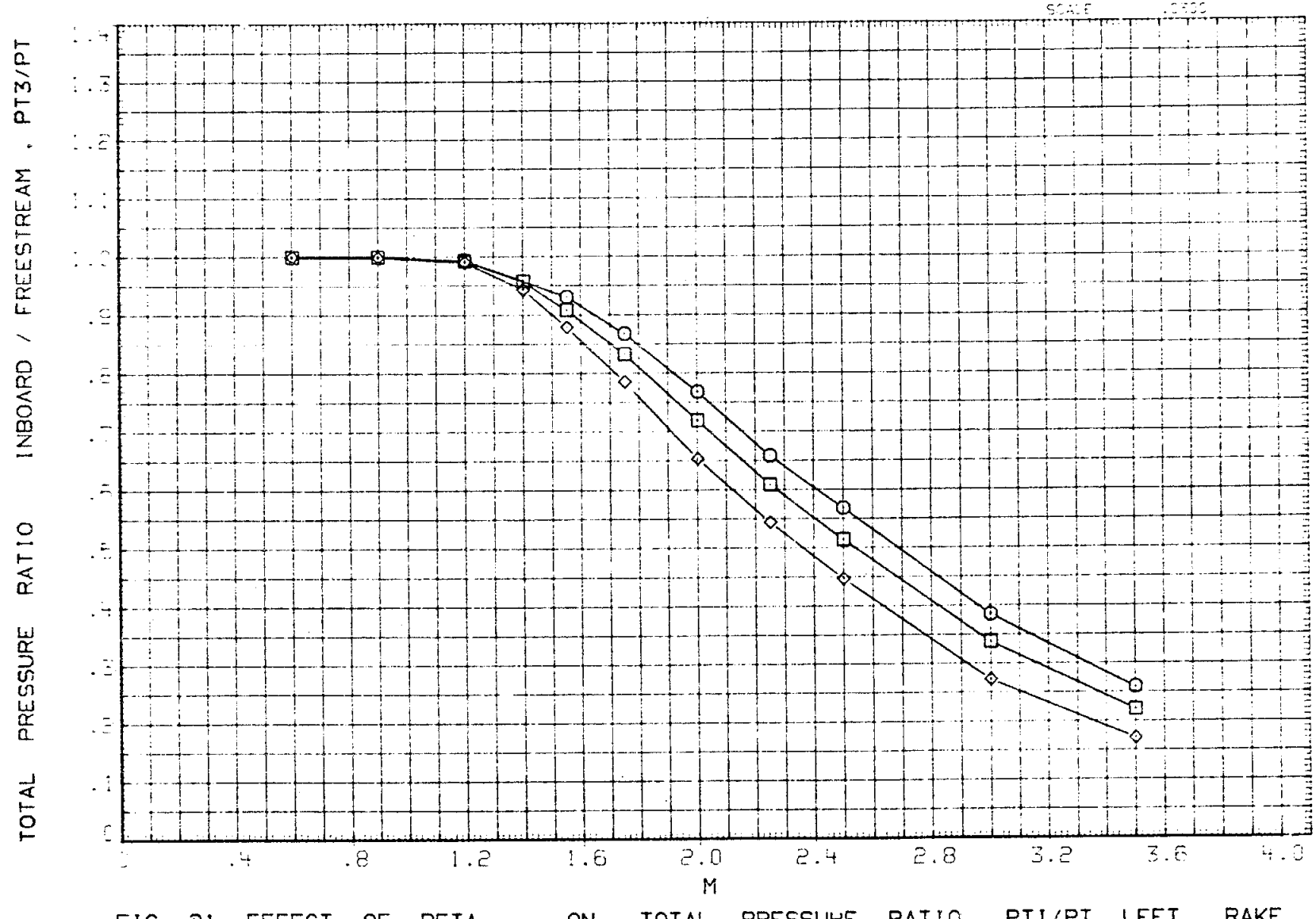


FIG. 21 EFFECT OF BETA ON TOTAL PRESSURE RATIO PTI/PT LEFT RAKE

(D ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
BL78003	△	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
BL78005	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
BL78007	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
BL78001	◇	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

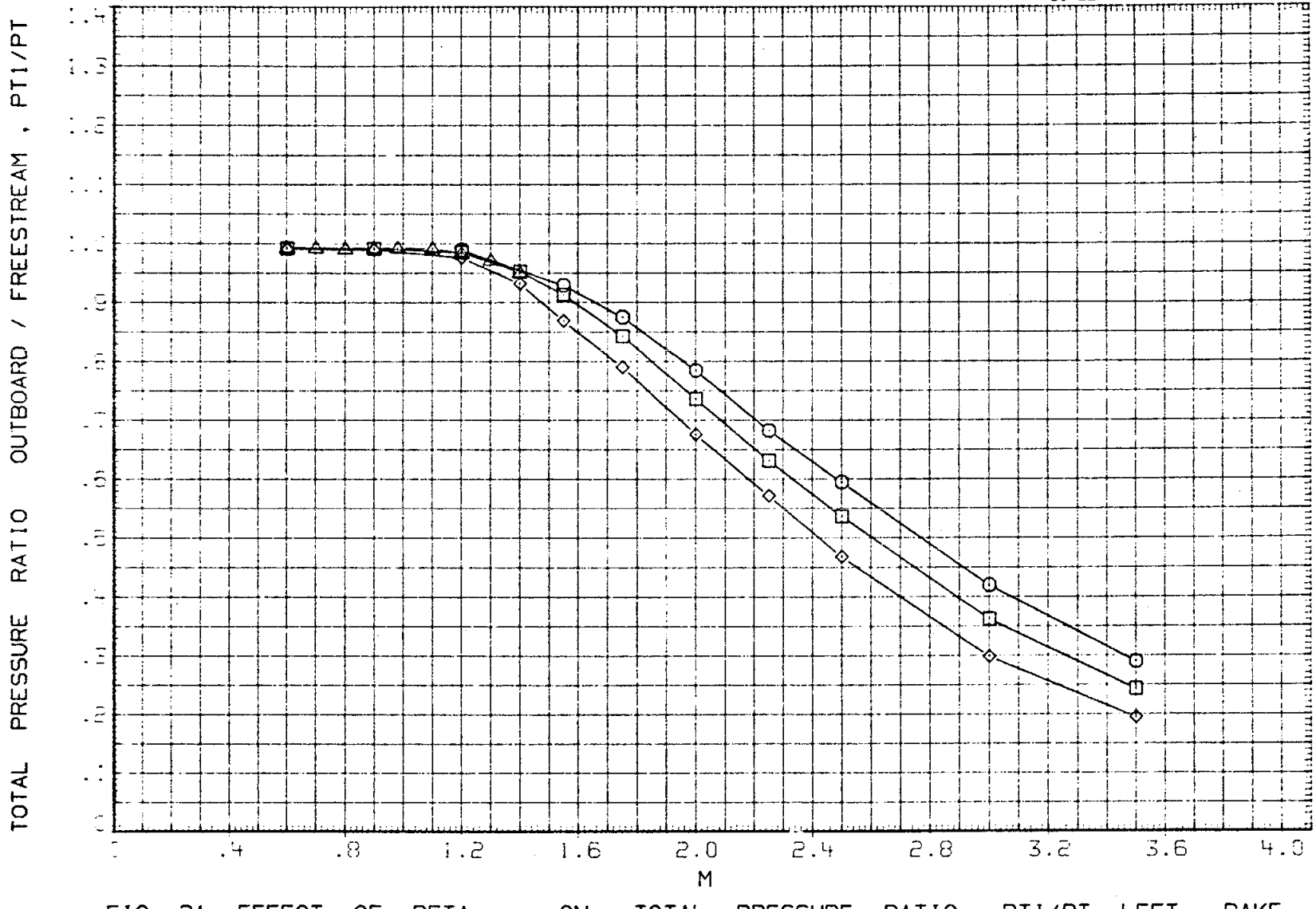


FIG. 21 EFFECT OF BETA ON TOTAL PRESSURE RATIO PTI/PT LEFT RAKE

(E)ALPHA = 24.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
[illegible]	◇	ARC 11-97-87-094 0A161 ORBITER + RAKES	-5.000	.000	.000	-7.170
[illegible]	□	ARC 11-97-87-094 0A161 ORBITER + RAKES	.000	.000	.000	-7.170
[illegible]	○	ARC 11-97-87-094 0A161 ORBITER + RAKES	5.000	.000	.000	-7.170
[illegible]	△	ARC 11-97-87-094 0A161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
[illegible]	[illegible]	IN.
[illegible]	936.6600	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

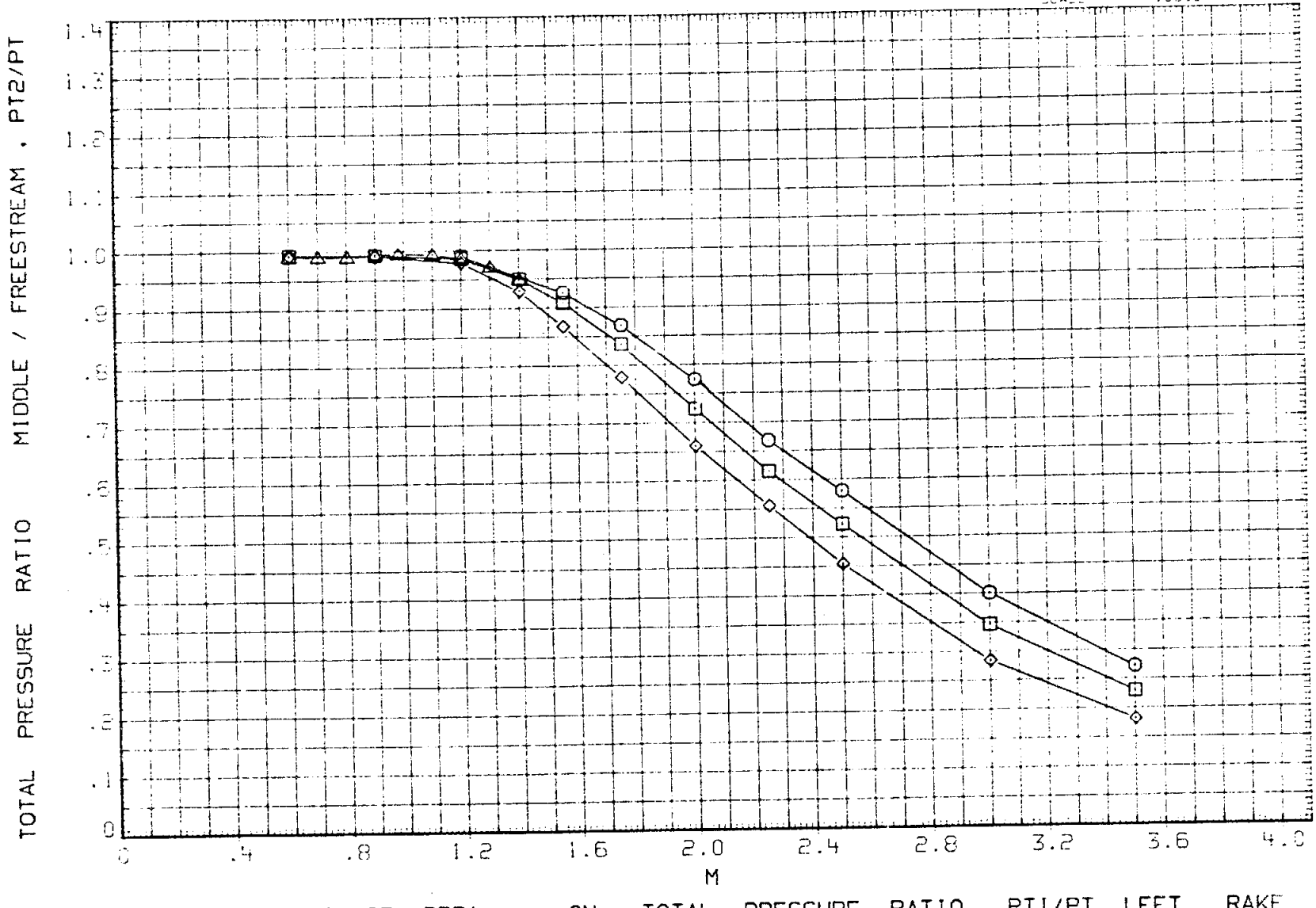


FIG. 21 EFFECT OF BETA ON TOTAL PRESSURE RATIO PTI/PT LEFT RAKE

(E) ALPHA = 24.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
RETB13		ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
RETB05		ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
RETB23		ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
RETB01		ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

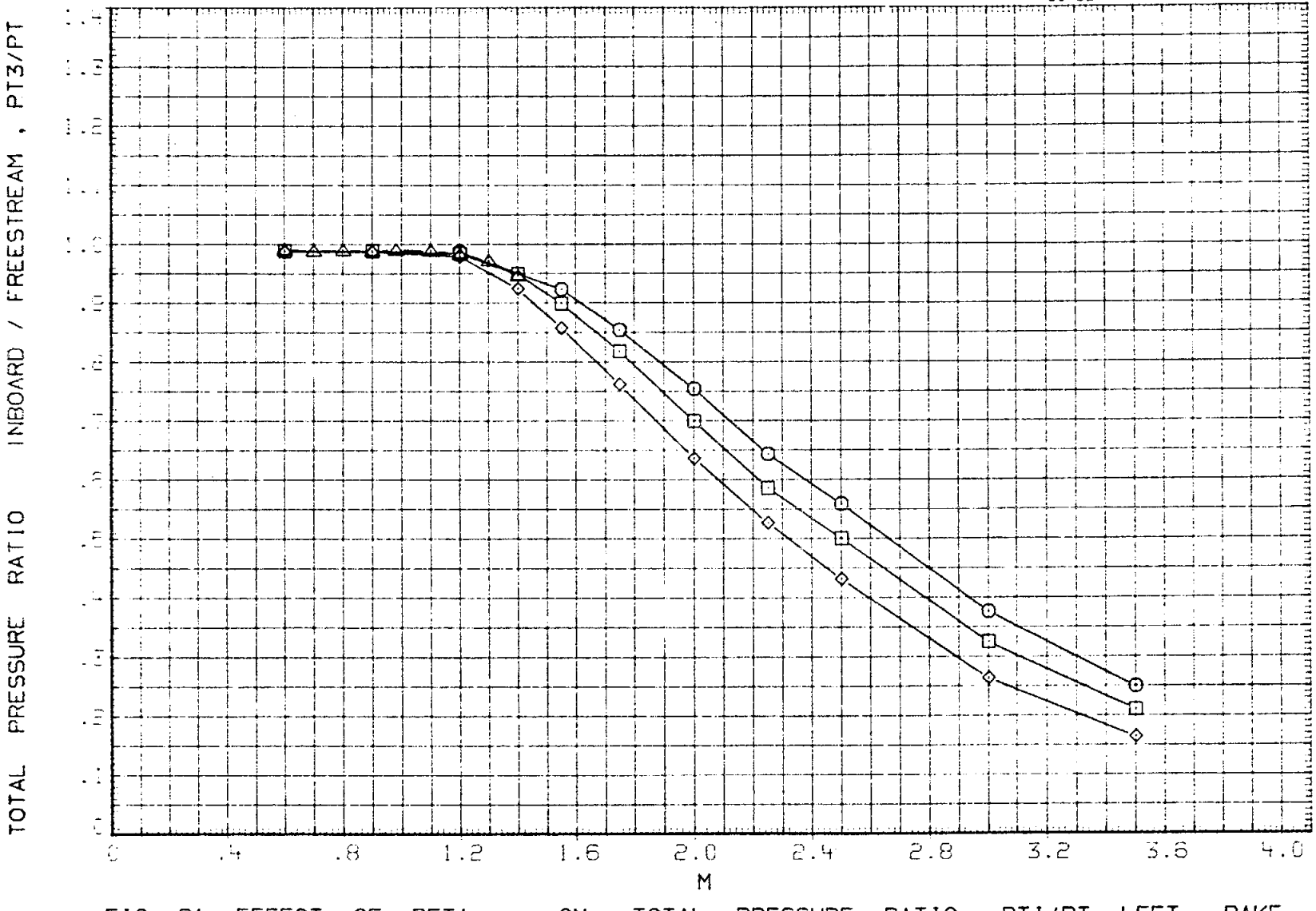


FIG. 21 EFFECT OF BETA ON TOTAL PRESSURE RATIO PT1/PT LEFT RAKE

(E) ALPHA = 24.00

DATA SE	SYMBOL	CONFIGURATION	BETA	ELEVON	AILERON	BDFLAP
[illegible]	[illegible]	ARC 11-97-87-094 OA(6) ORBITER + RAKE	[illegible]	.000	.000	-7.170
[illegible]	[illegible]	ARC 11-97-87-094 OA(6) ORBITER + RAKES	.000	.000	.000	-7.170
[illegible]	[illegible]	ARC 11-97-87-094 OA(6) ORBITER + RAKES	5.000	.000	.000	-7.170
[illegible]	[illegible]	ARC 11-97-87-094 OA(6) ORBITER + WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
[illegible]	[illegible]	SQ FT
LREF	474.8000	IN.
BREF	365.8000	IN.
XMRP	1076.6800	IN. XO
YMRP	[illegible]	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0900	

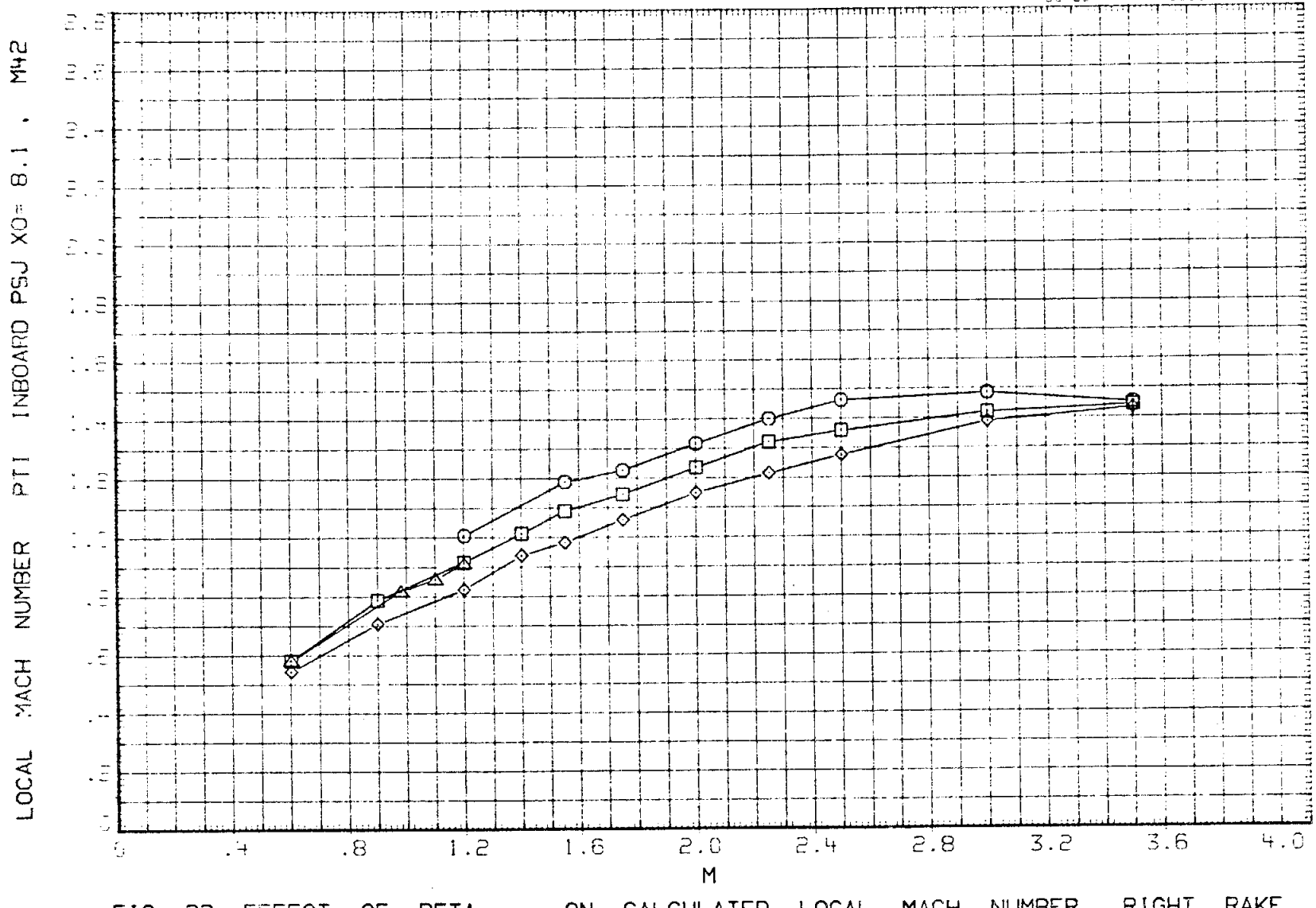


FIG. 22 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

(A)ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
FE7X03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7X05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7X07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7X01	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

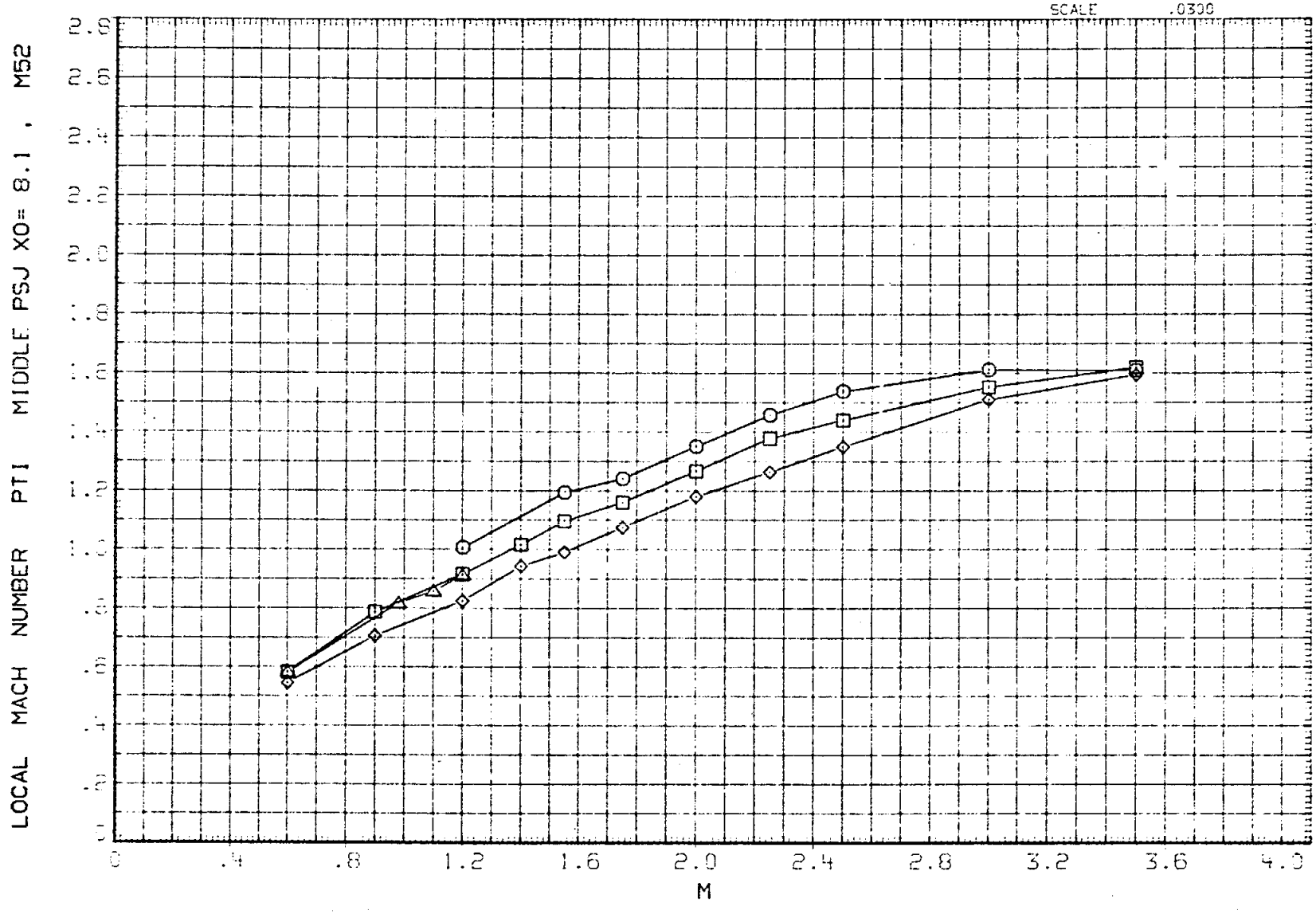


FIG. 22 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

(A) ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
FE7K02	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7K05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7K07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7K01	△	ARC 11-97-87-094 OA161 ORBITER + WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1078.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

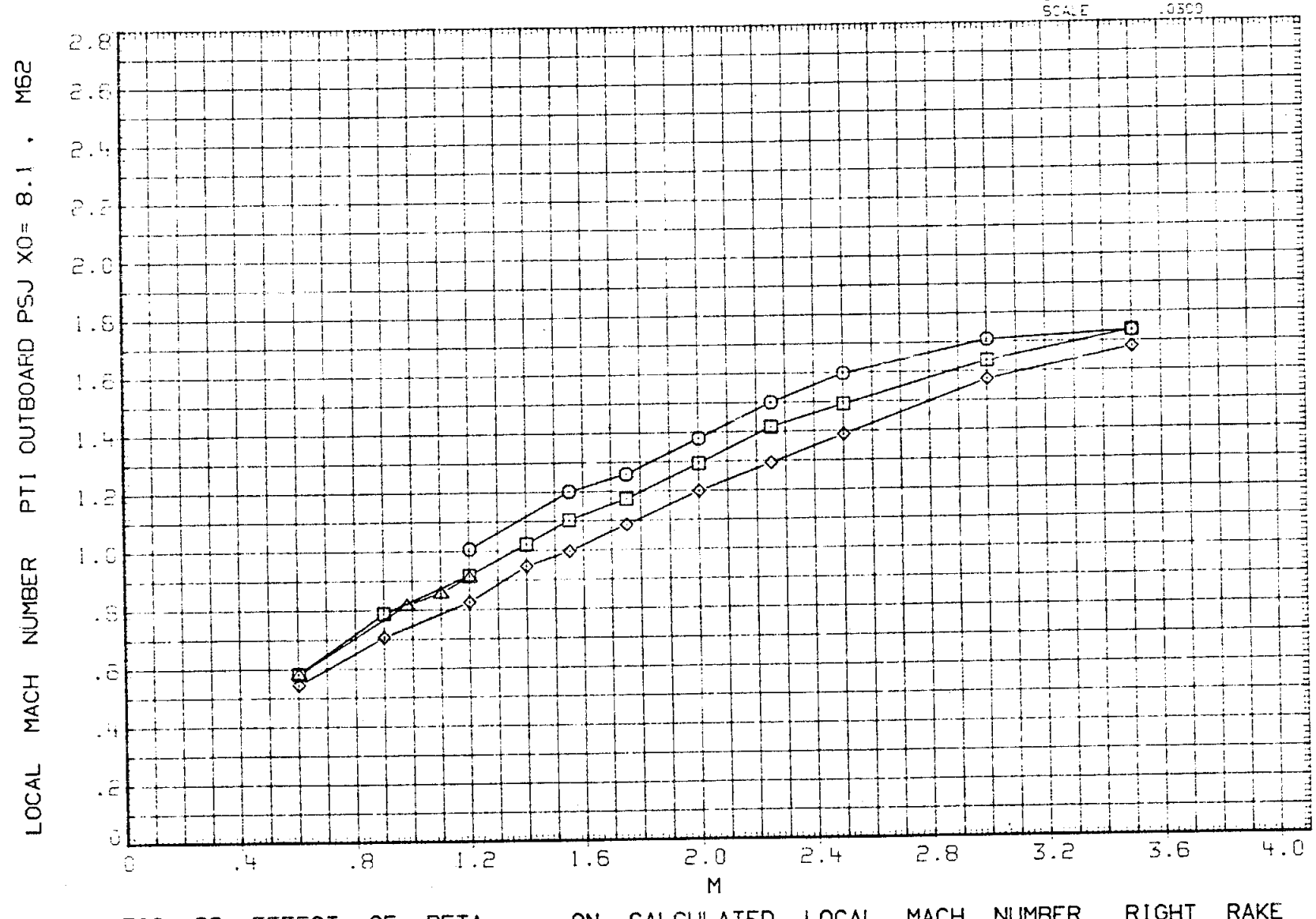


FIG. 22 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

(A) ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
FE7X03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7X05	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7X07	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7X01	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

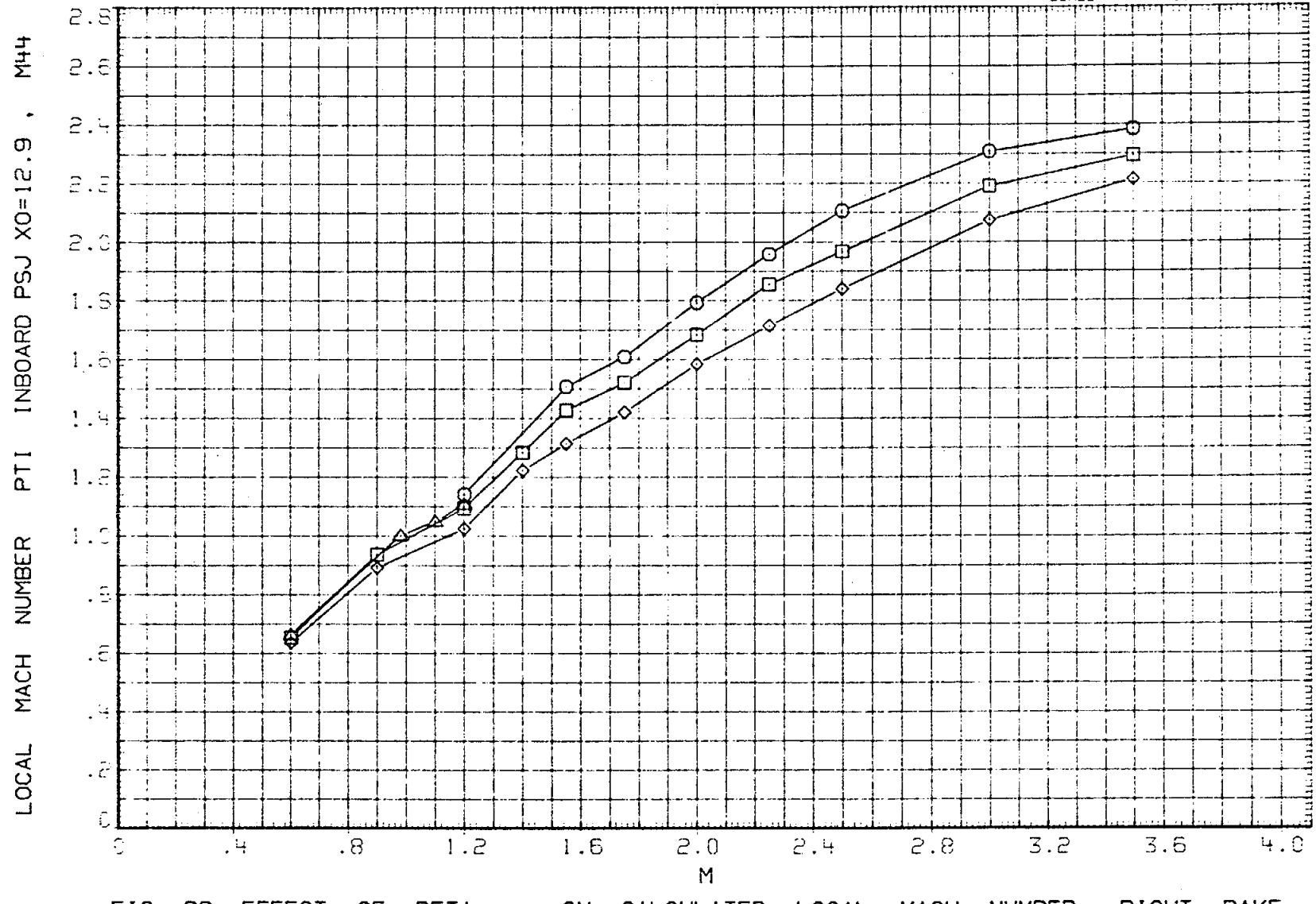


FIG. 22 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

(A) ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BOFLAP
FE7X03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-[illegible].170
FE7X05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-[illegible].170
FE7X07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-[illegible].170
FE7A01	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-[illegible].170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

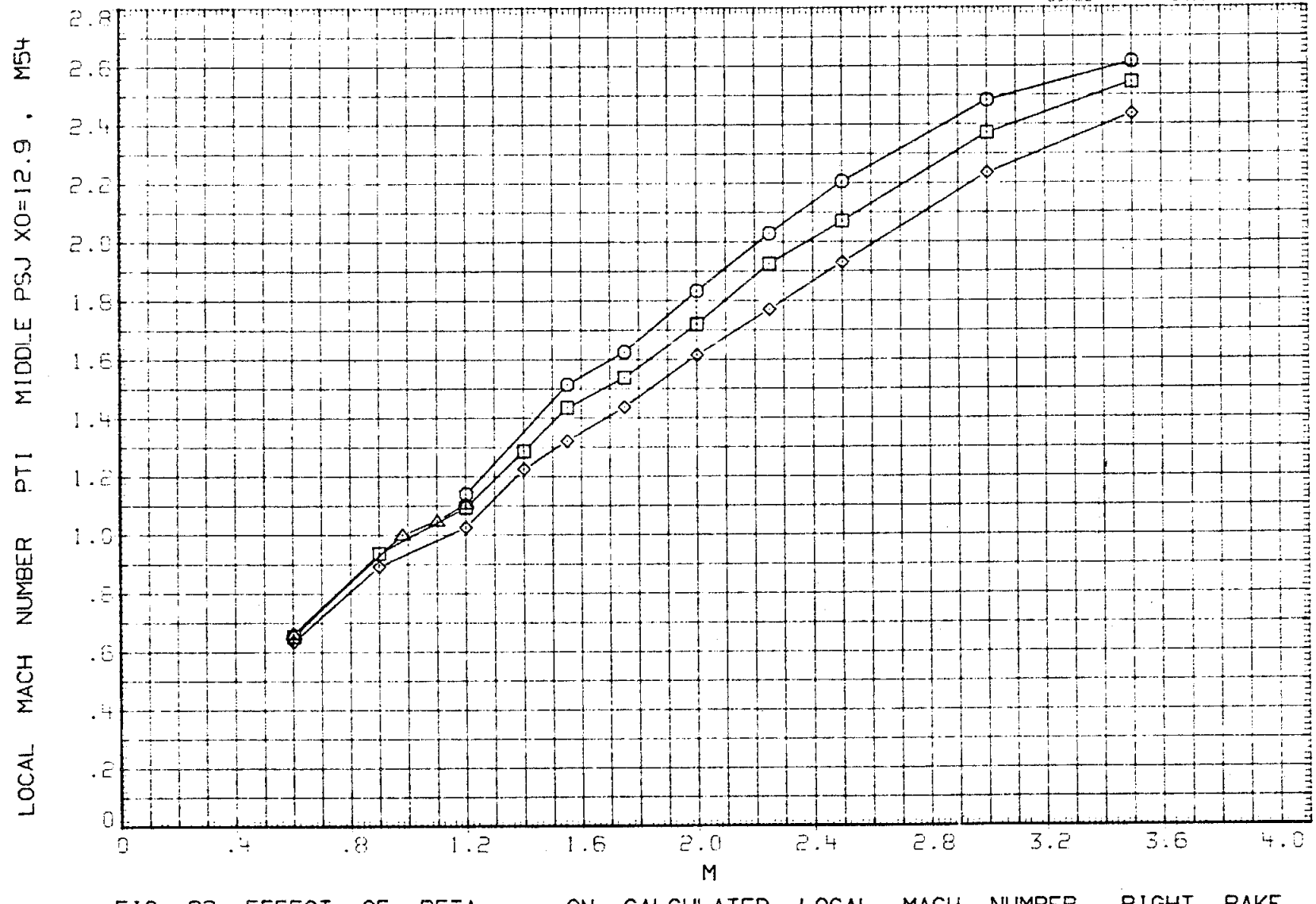


FIG. 22 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

(A) ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
FE7X03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7X05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7X01	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7X02	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

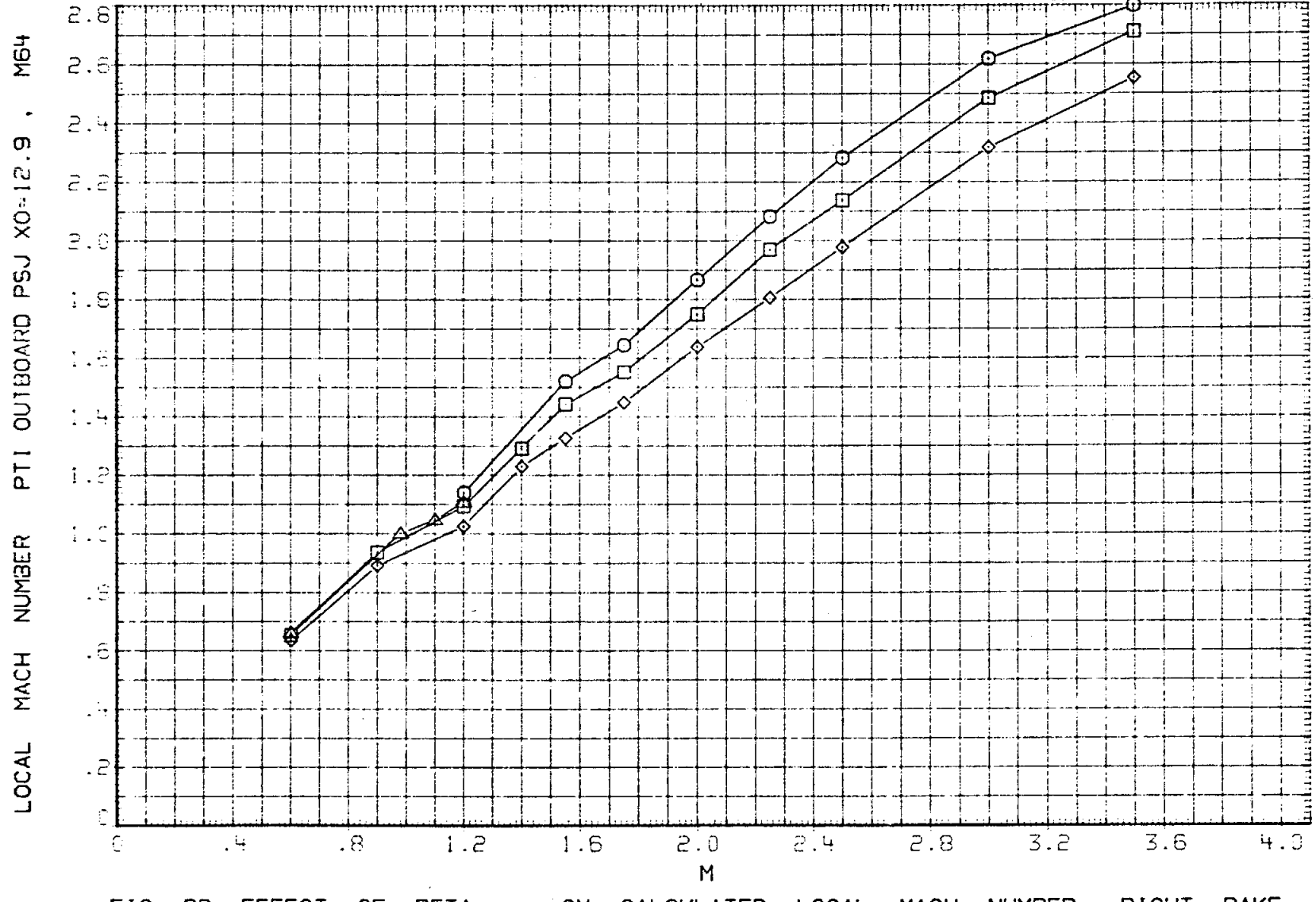


FIG. 22 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

FA1ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION
[illegible]	[illegible]	APC 11-97-87-094 OA161 ORBITER + RAKES
[illegible]	[illegible]	APC 11-97-87-094 OA161 ORBITER + RAKES
[illegible]	[illegible]	APC 11-97-87-094 OA161 ORBITER + RAKES
[illegible]	[illegible]	DATA NOT AVAILABLE

BETA	ELEVON	AILRON	BDFLAP
-5.000	.000	.000	-7.170
.000	.000	.000	-7.170
5.000	.000	.000	-7.170
.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

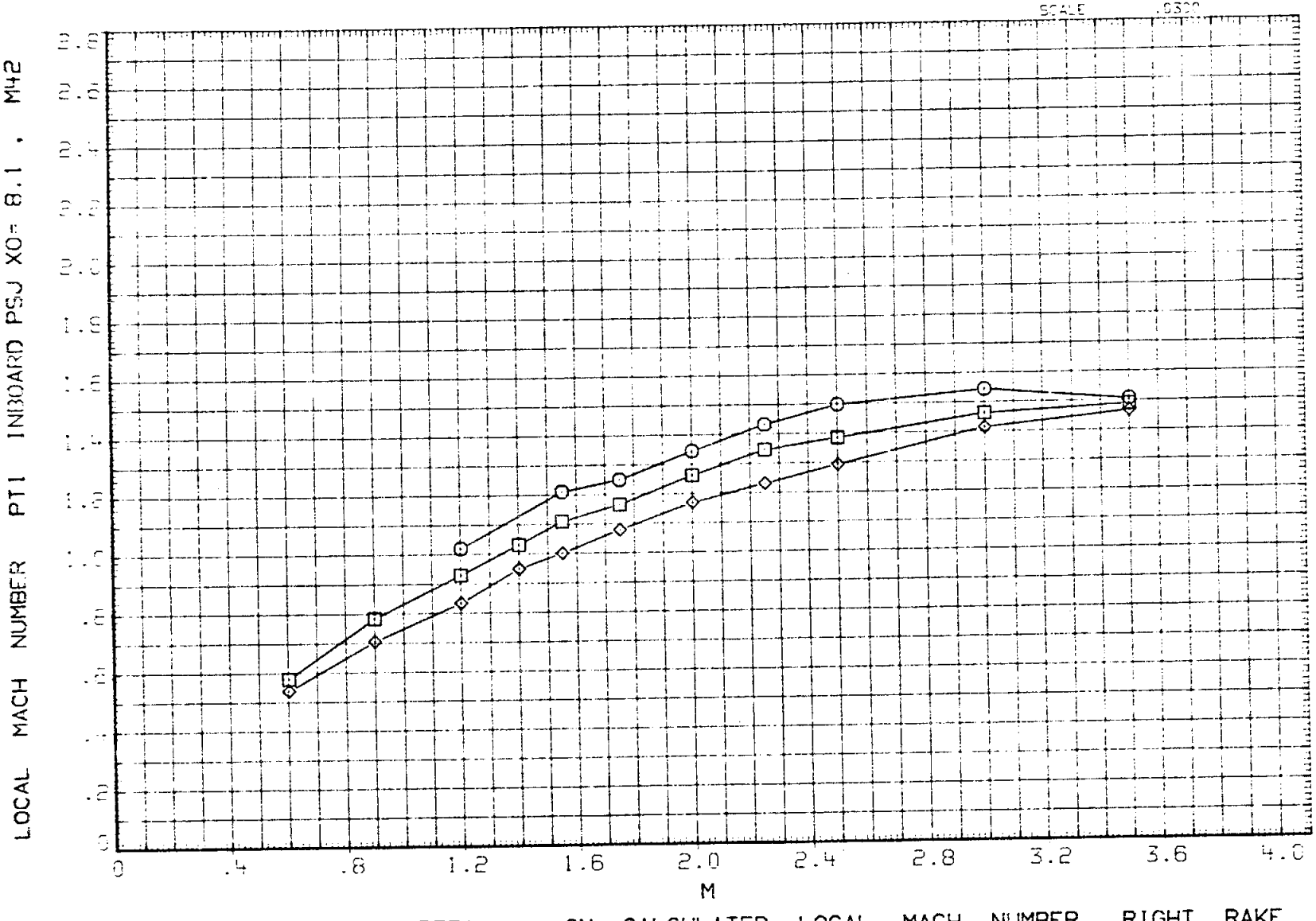


FIG. 22 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

[illegible] ALPHA = 6.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
FE7X03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7X05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7X07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7X01	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

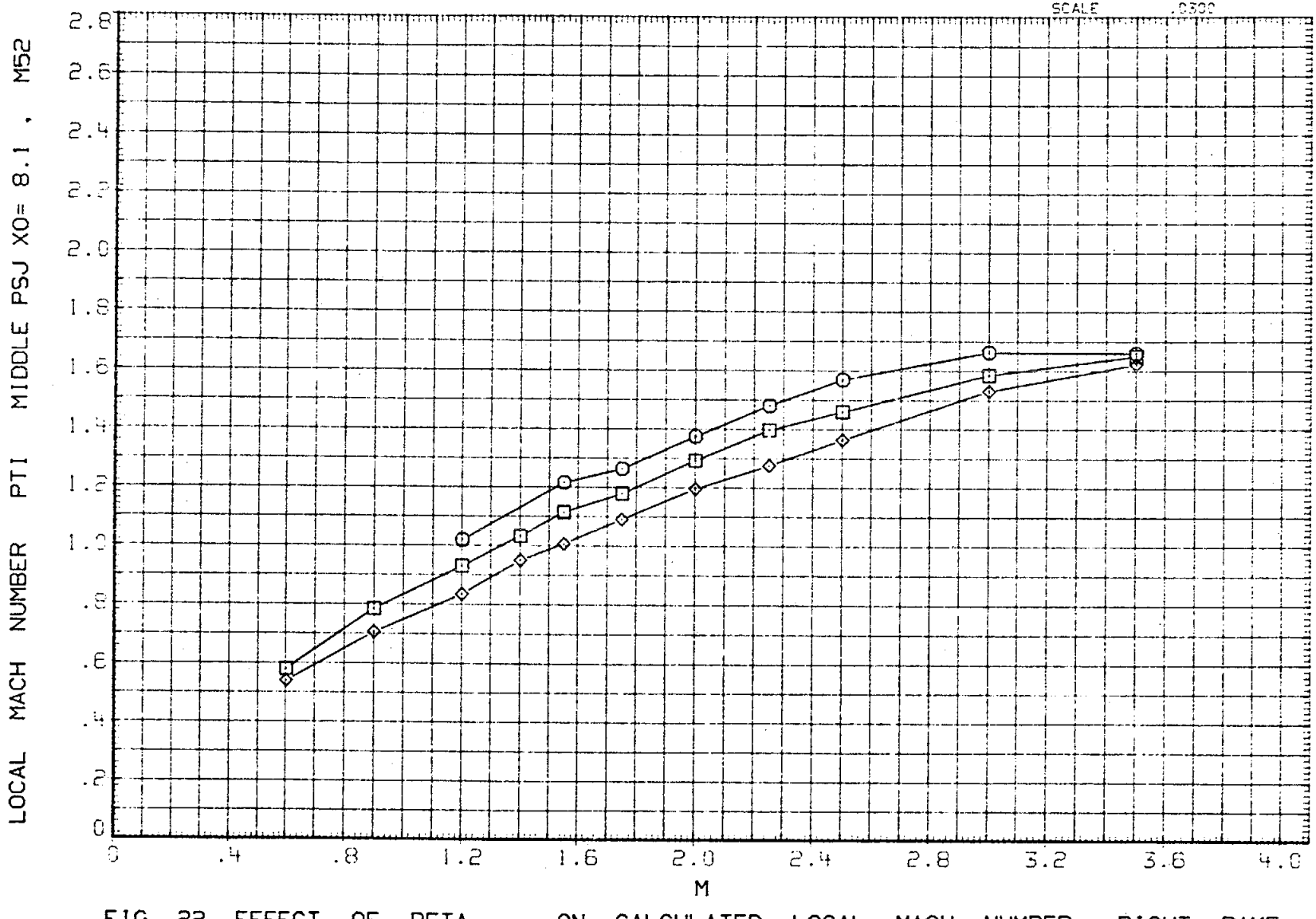


FIG. 22 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

(B)ALPHA = 6.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	RDFLAP
FE7K03	◇(□)	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7K04	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7K07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7K01	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.5900	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

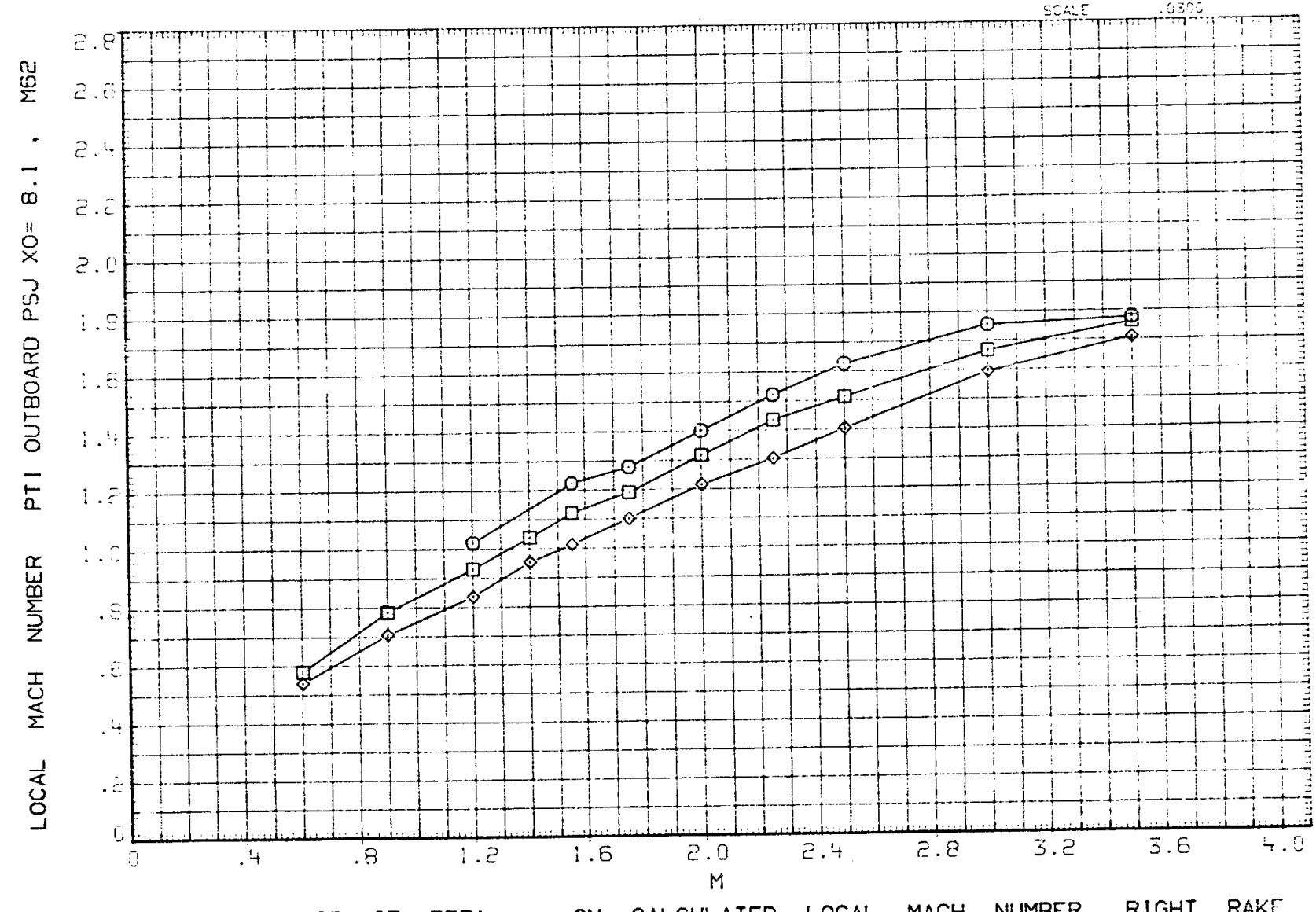


FIG. 22 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

(6) ALPHA = 6.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
FE7X03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7X05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7X07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7X01	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	935.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

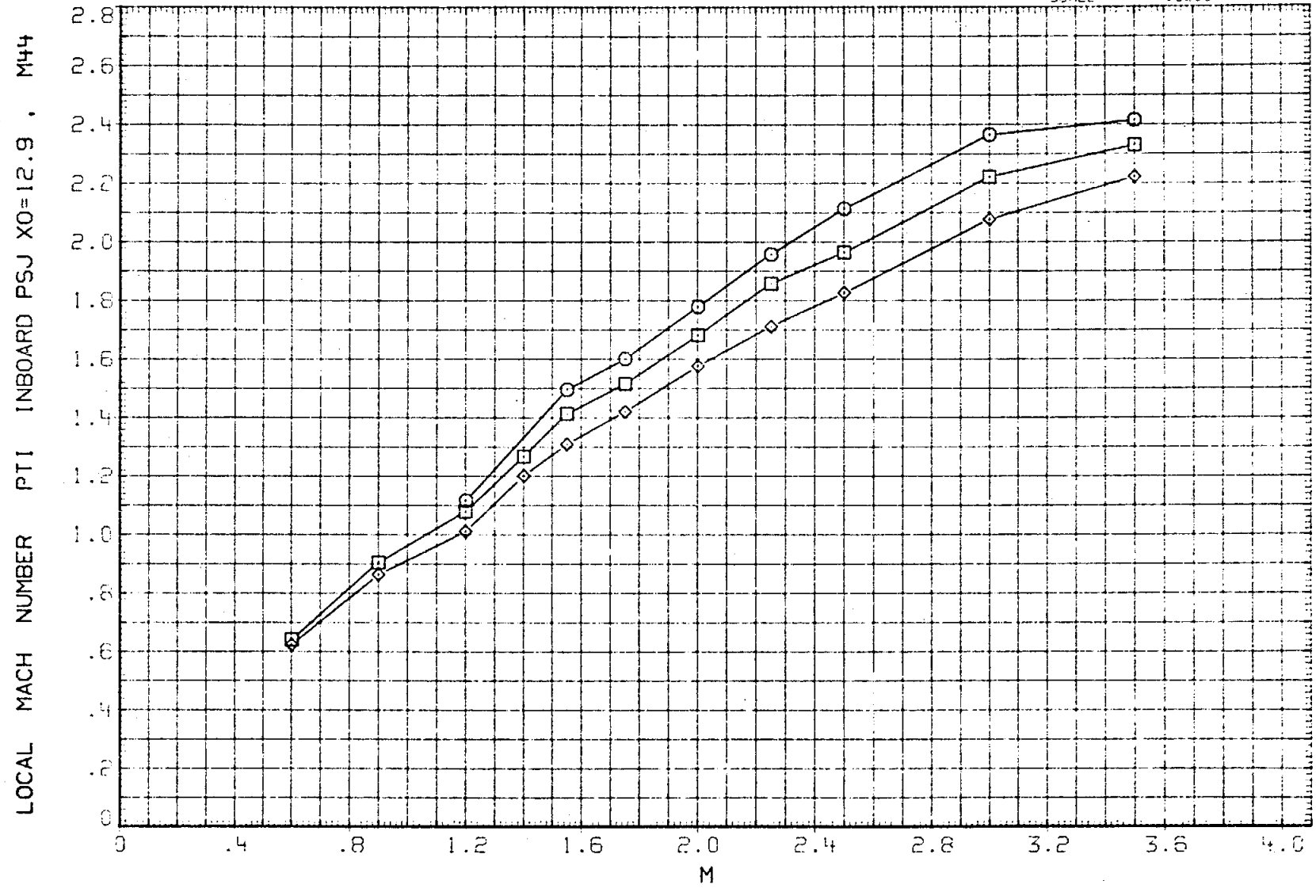


FIG. 22 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

(B) ALPHA = 6.00

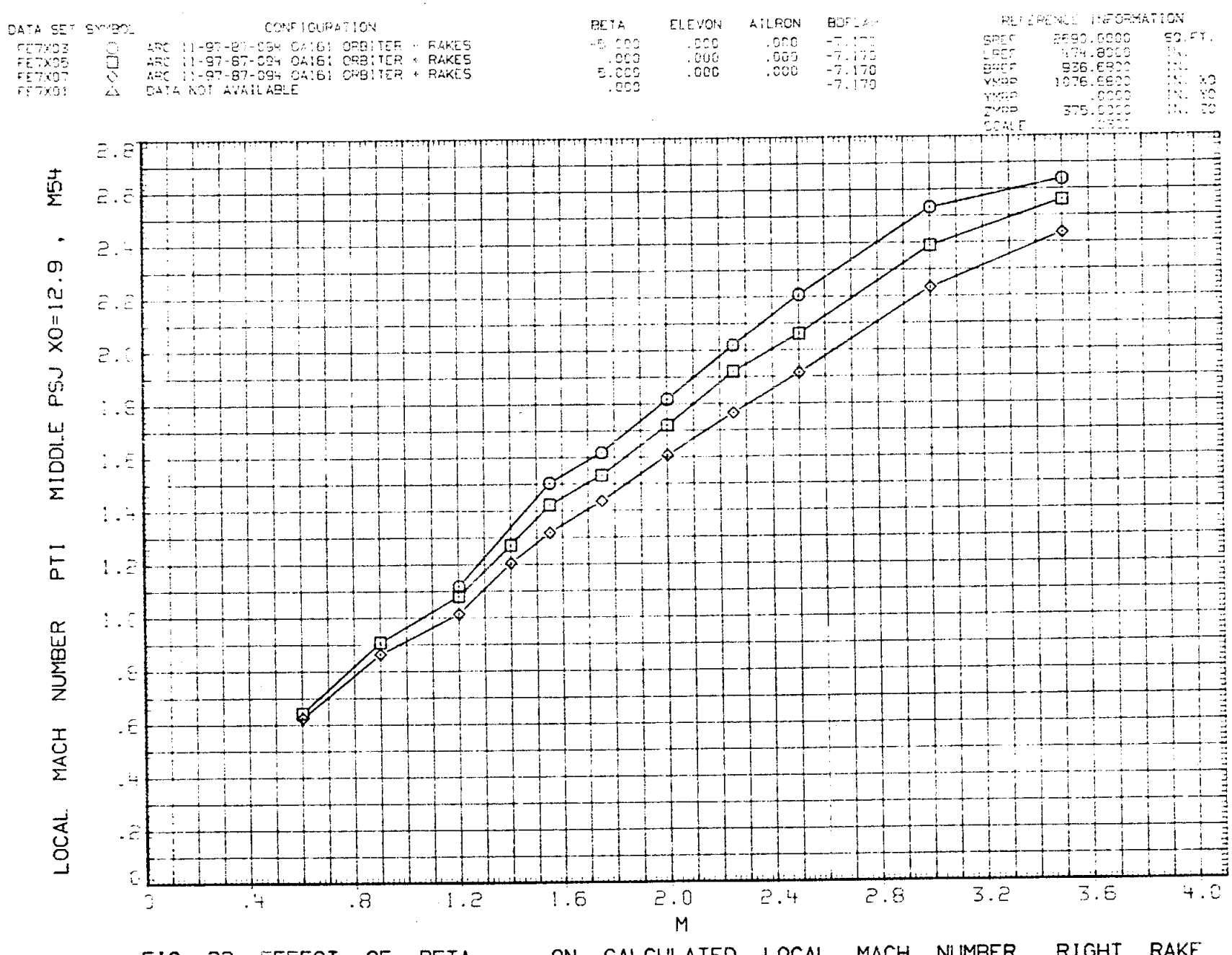


FIG. 22 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

(B)ALPHA = 6.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
FE7X03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7X05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7X07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7X01	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

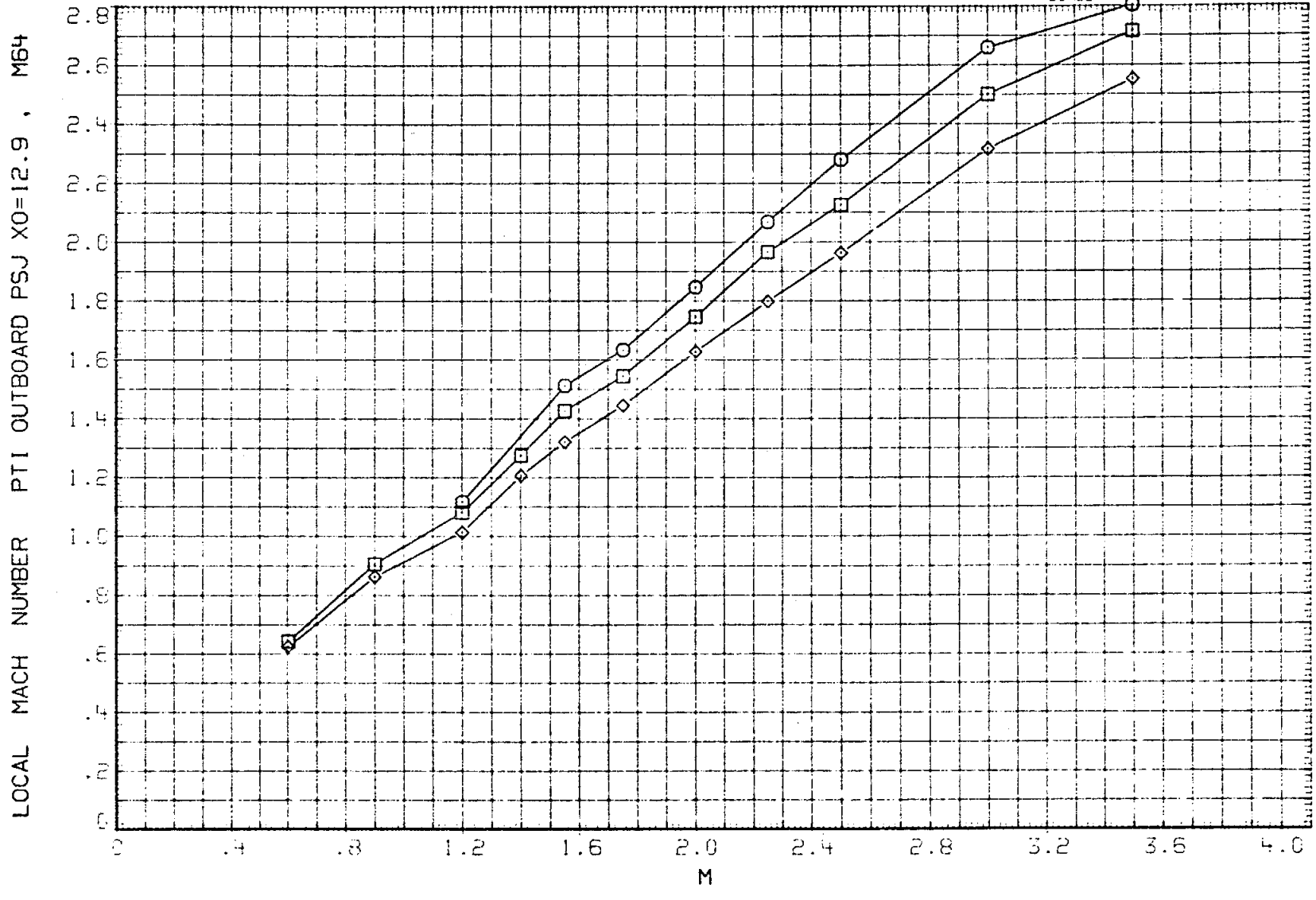


FIG. 22 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

(B) ALPHA = 6.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
FE7X03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7X05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7X07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7X01	△	ARC 11-97-87-094 OA161 ORBITER + WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	935.8800	IN.
XMRP	1075.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0300	IN. ZO
SCALE	.0200	

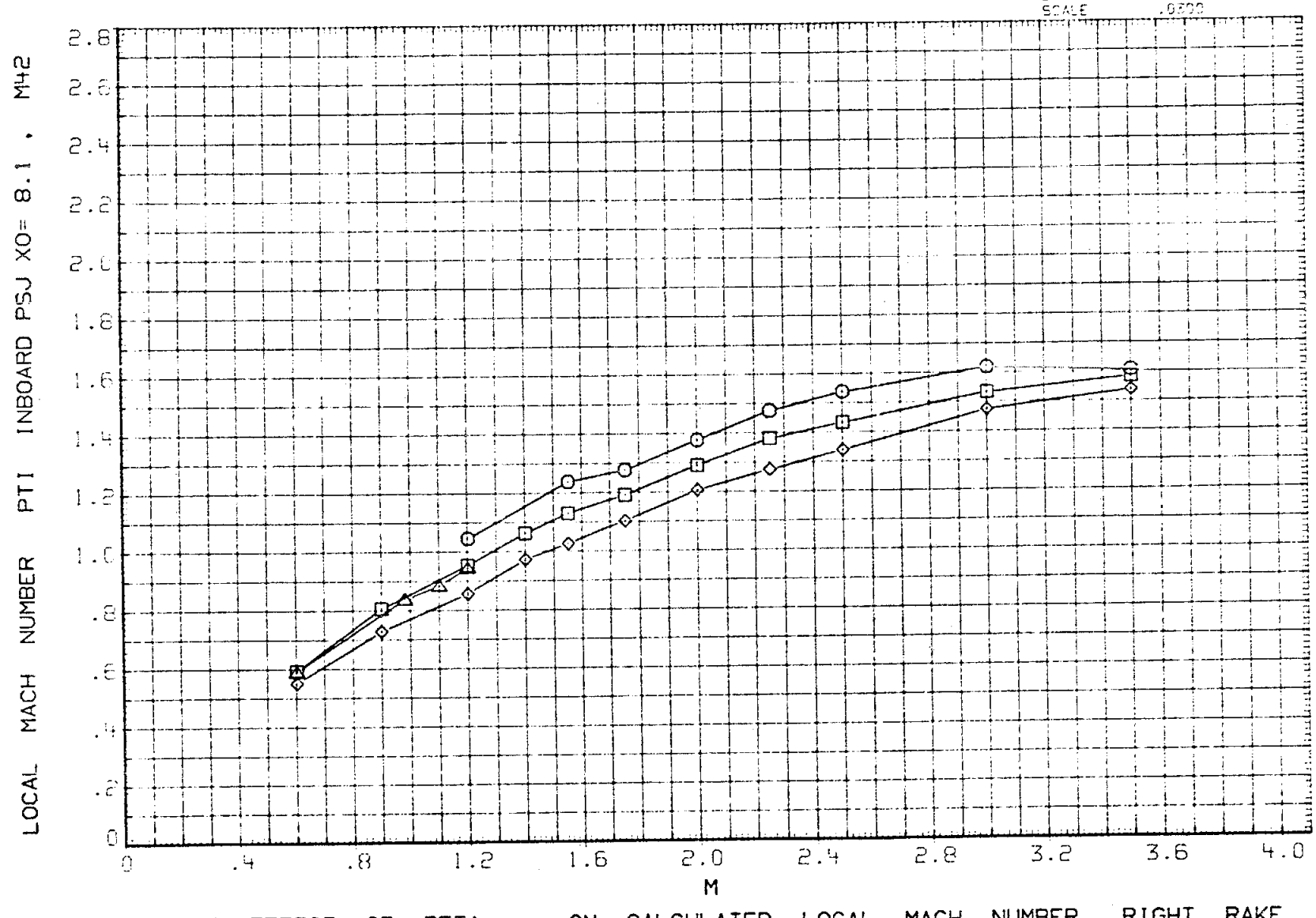


FIG. 22 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

(C)ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
FE7X03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7X05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7X07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7X01	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0600	

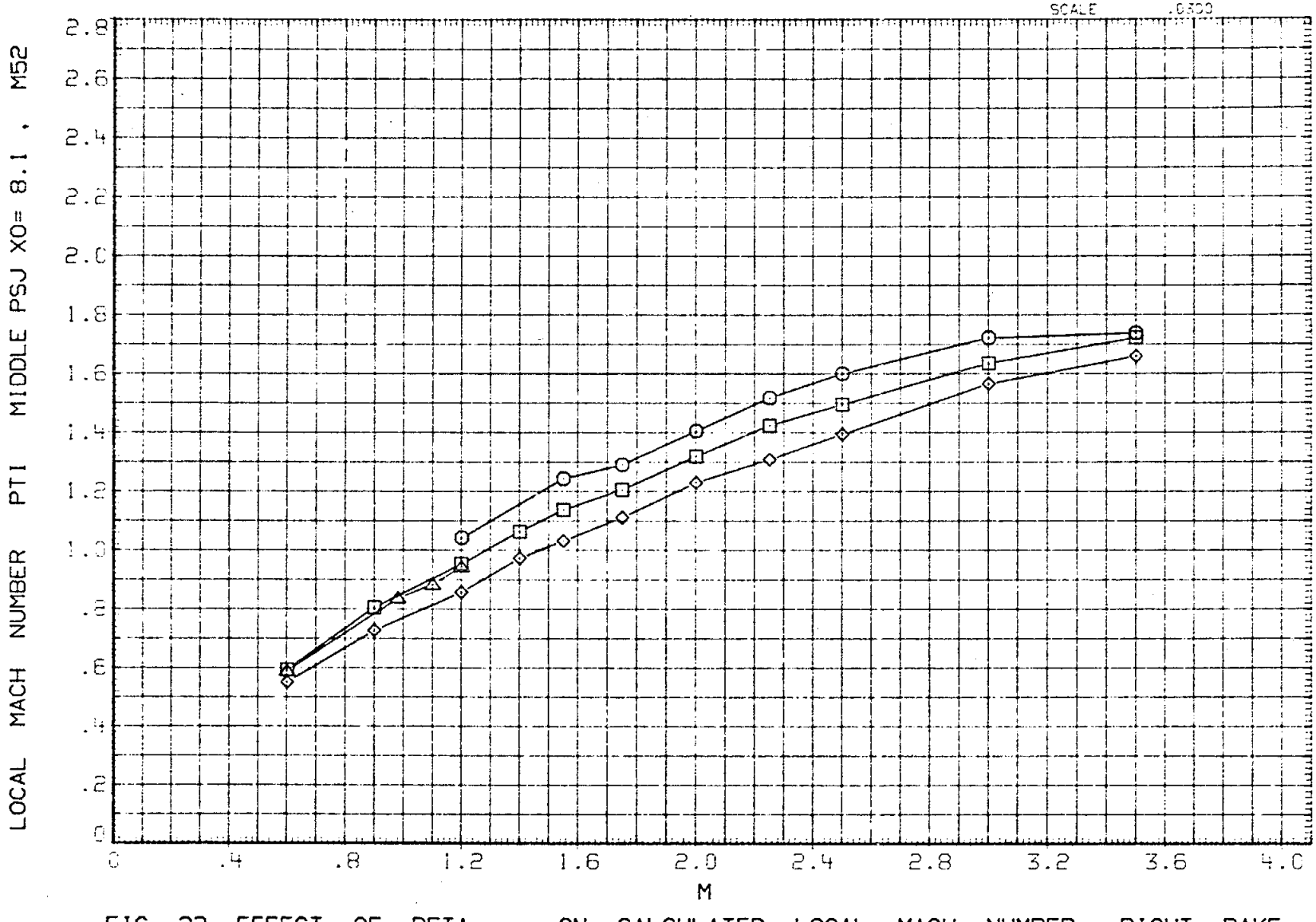


FIG. 22 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

(C) ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
FE7K03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7K05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7K07	△	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7K01	◇	ARC 11-97-87-094 OA161 ORBITER + WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	935.6900	IN.
XMRP	1076.8800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0500	

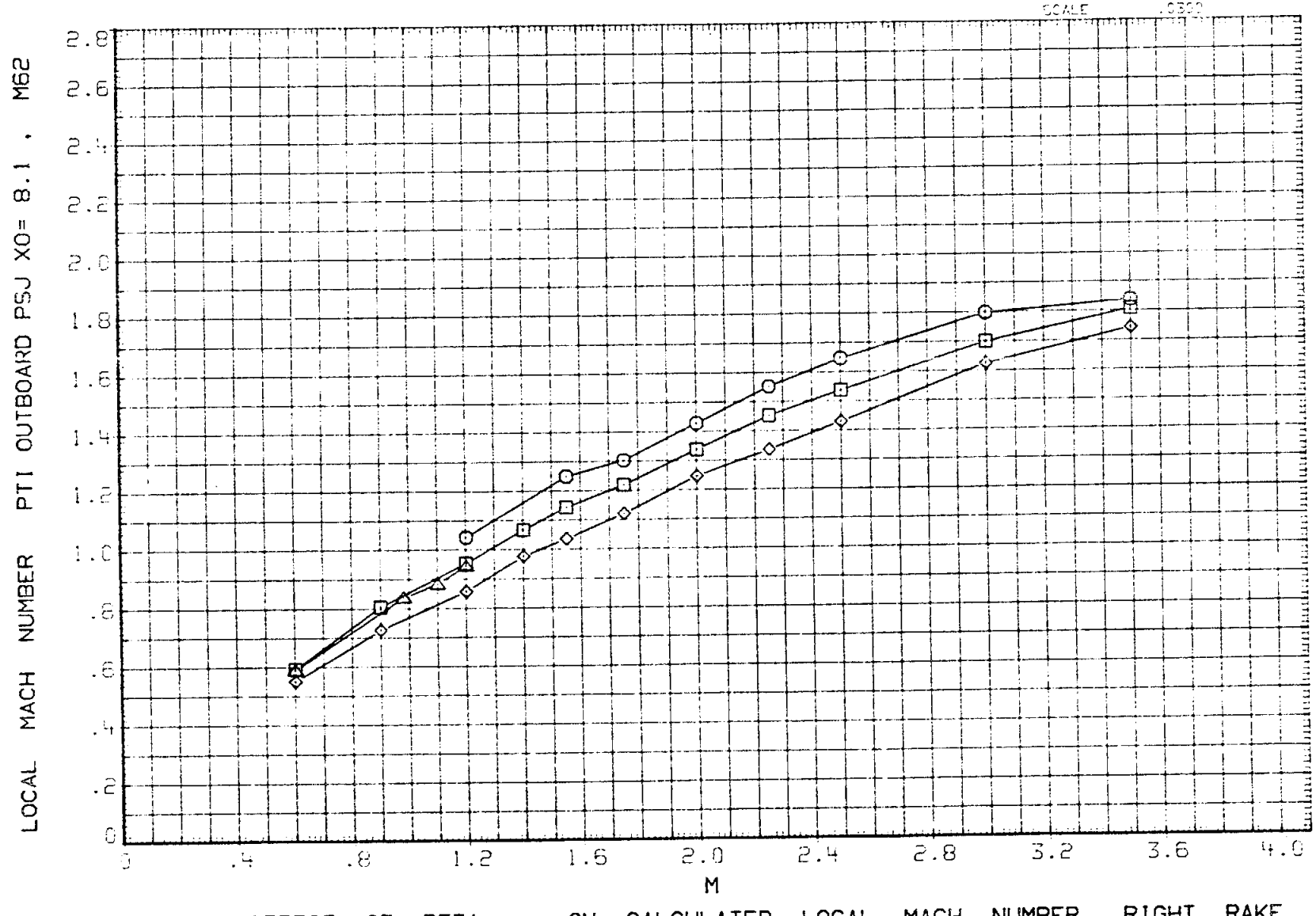


FIG. 22 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

(C)ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
FE7X03	○	ARC 11-97-87-094 0A161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7X05	□	ARC 11-97-87-094 0A161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7X07	◇	ARC 11-97-87-094 0A161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7X01	△	ARC 11-97-87-094 0A161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	935.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0350	

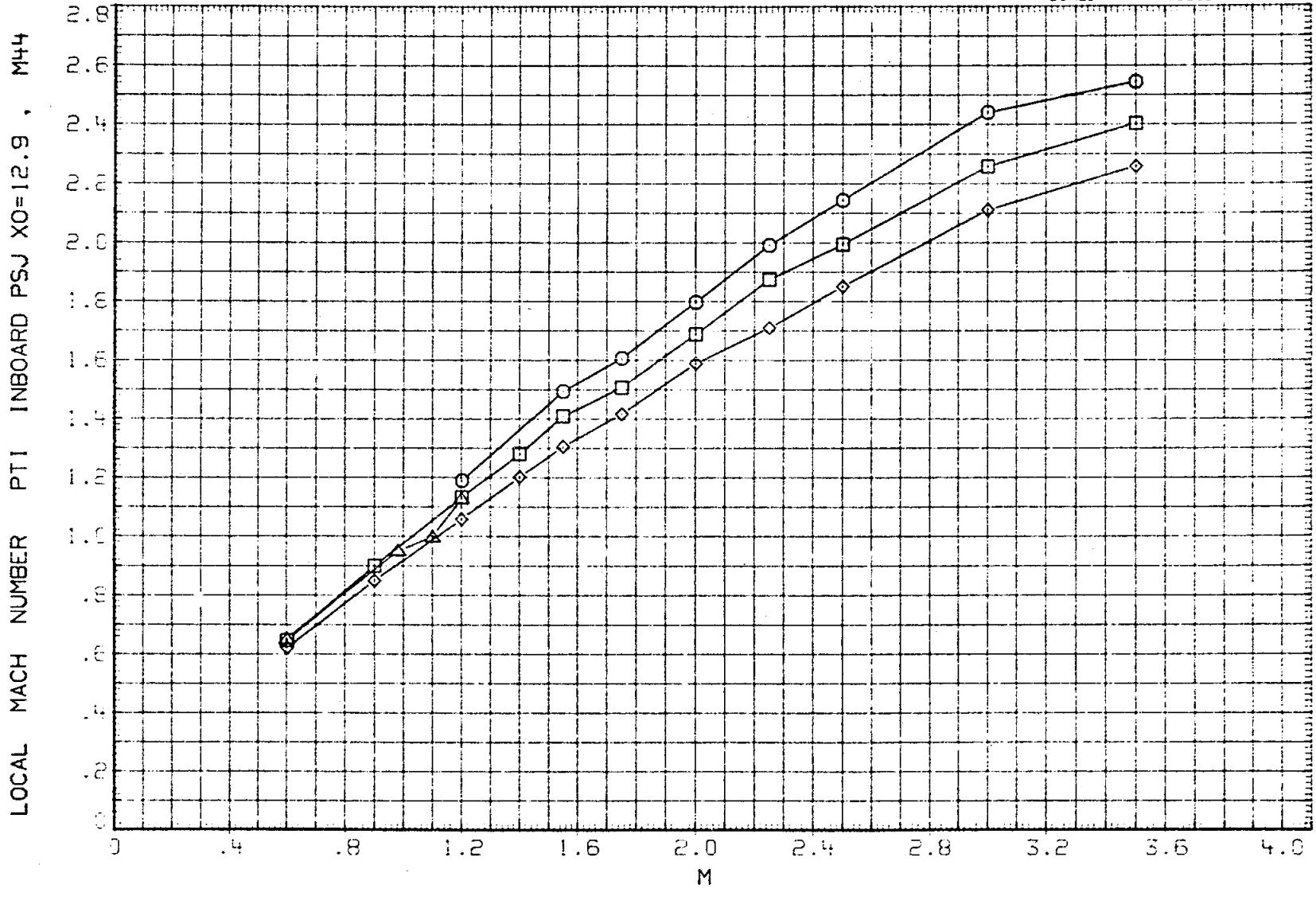


FIG. 22 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

(C) ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
FE7X03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7X05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7X07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7X01	△	ARC 11-97-87-094 OA161 ORBITER + WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

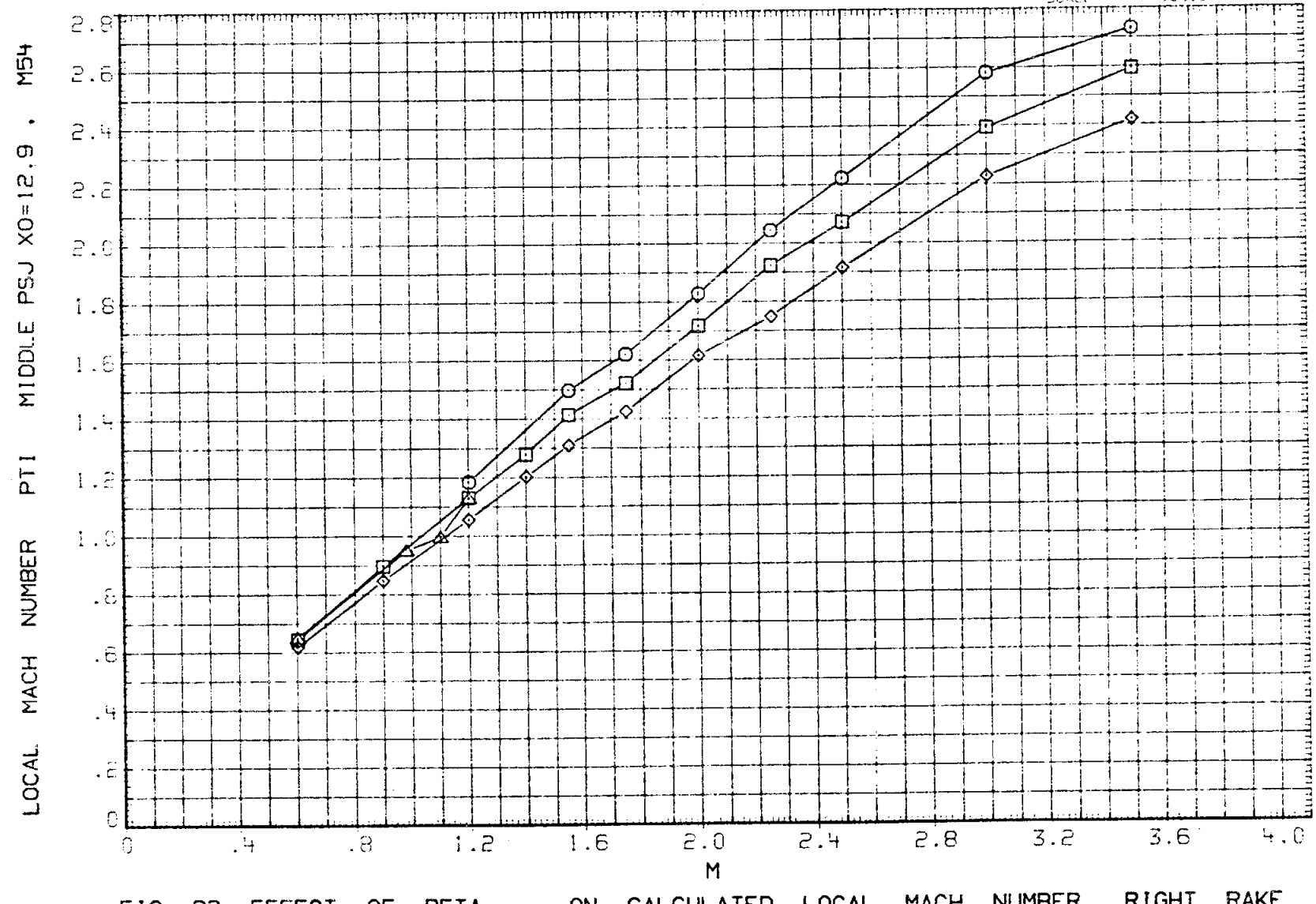


FIG. 22 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

(C)ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
FE7X03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7X05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7X07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7X01	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	575.0000	IN. ZO
SCALE	.0300	

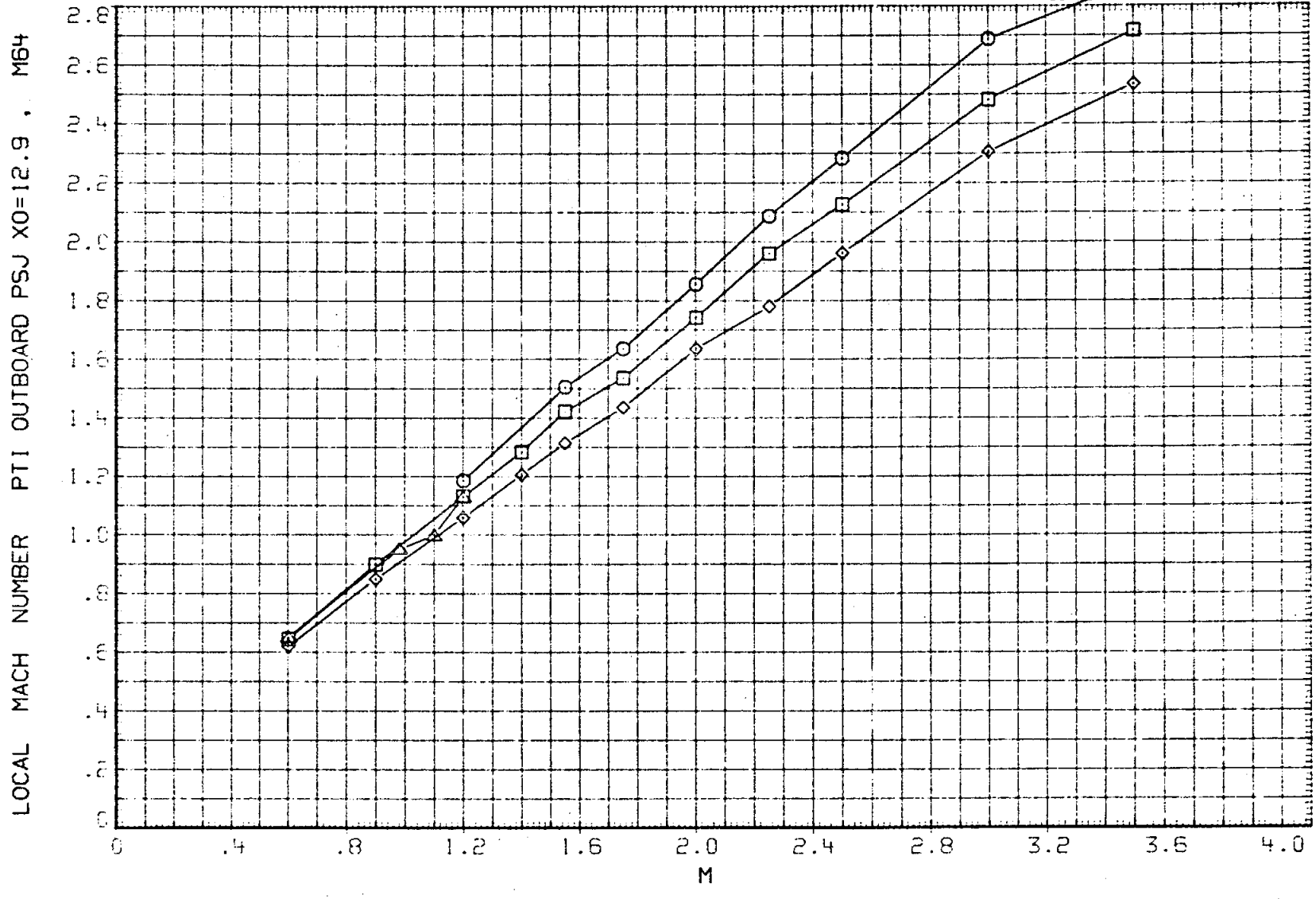


FIG. 22 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

(C) ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	RDFLAP
[illegible]	[illegible]	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
[illegible]	[illegible]	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
[illegible]	[illegible]	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
[illegible]	[illegible]	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

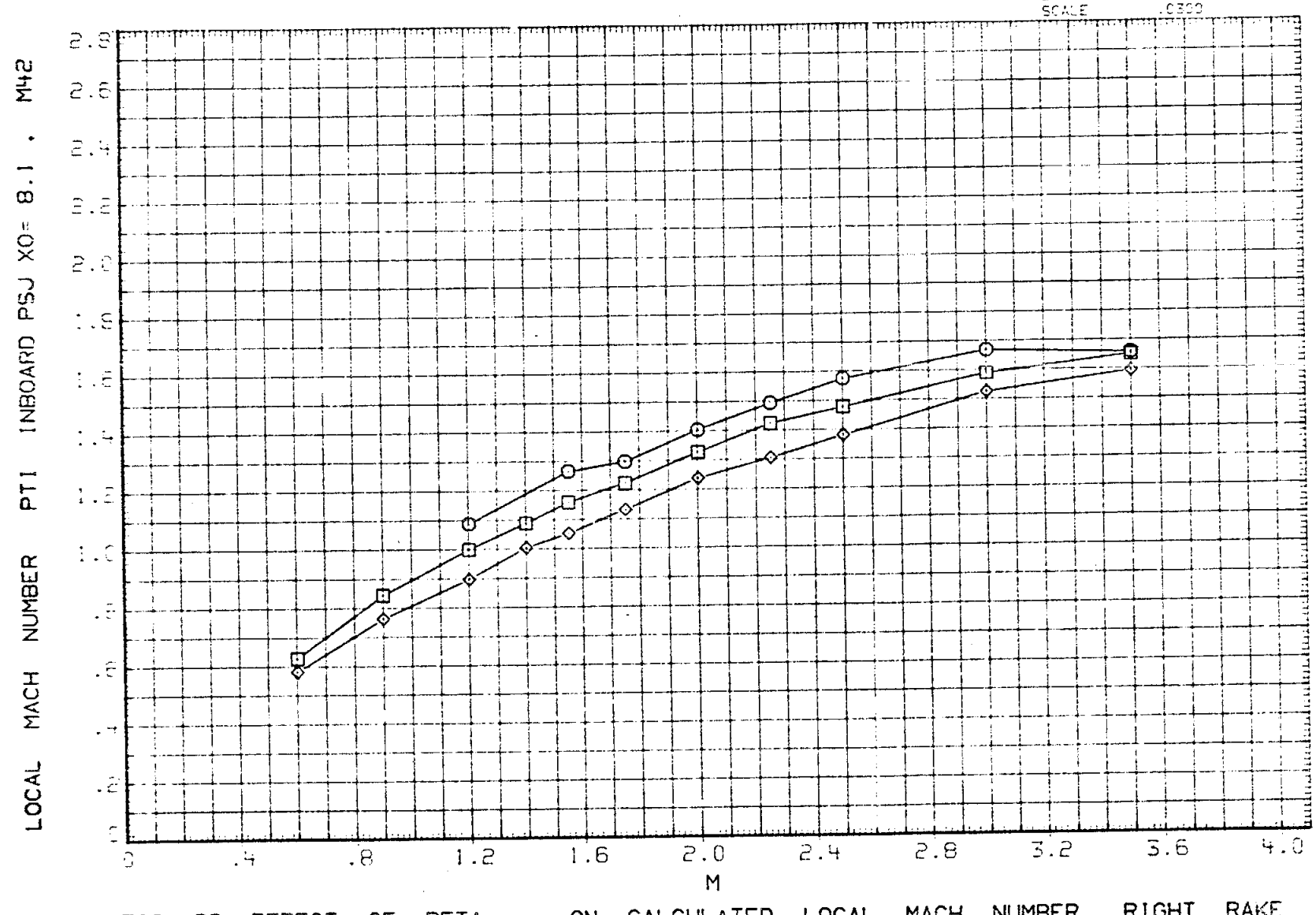


FIG. 22 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

(D: ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
FETX03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FETX05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
FETX07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
FETX01	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

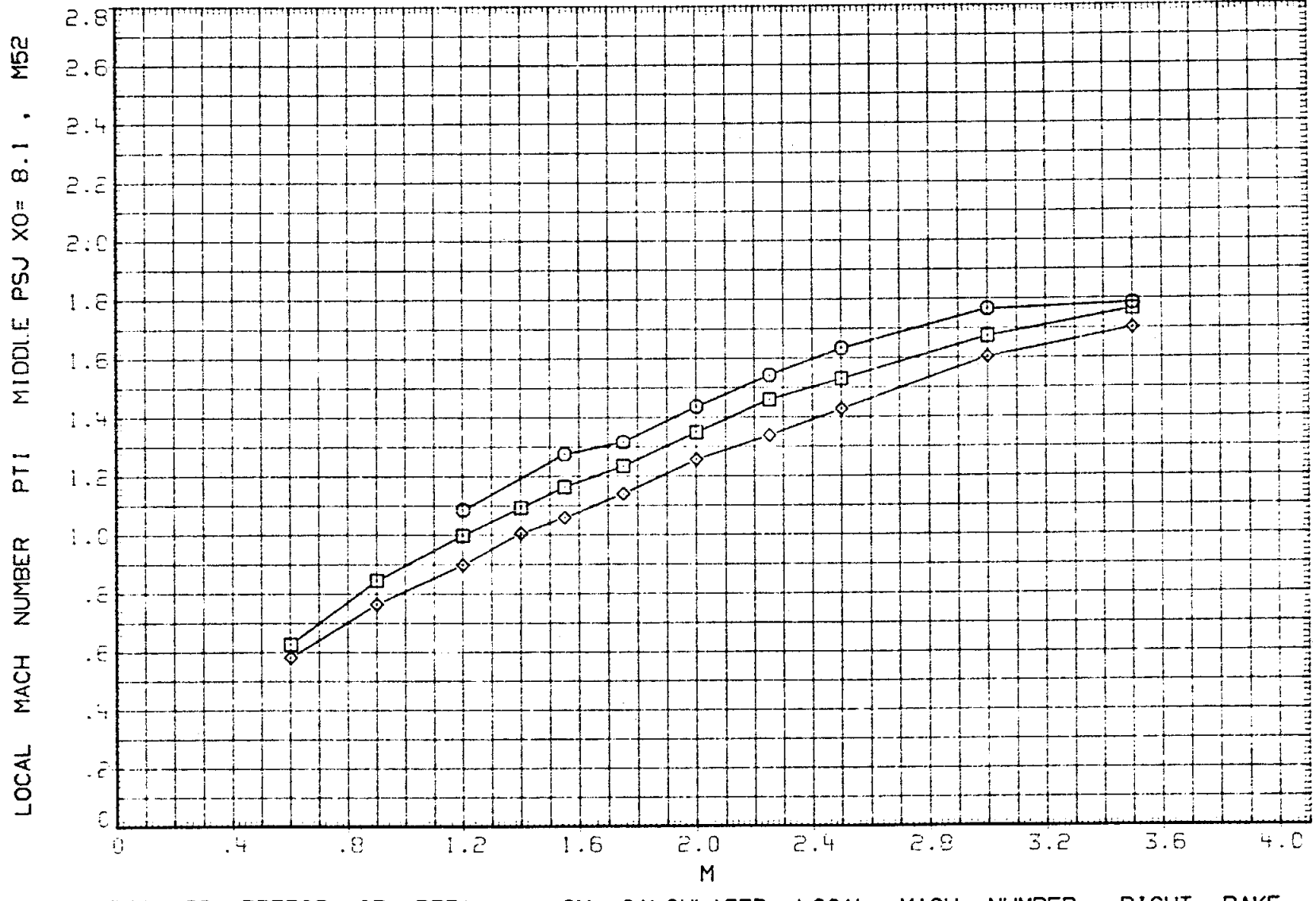


FIG. 22 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

(D)ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
FE7K05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7K08	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7K03	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7K01	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION

SREF	2590.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0500	

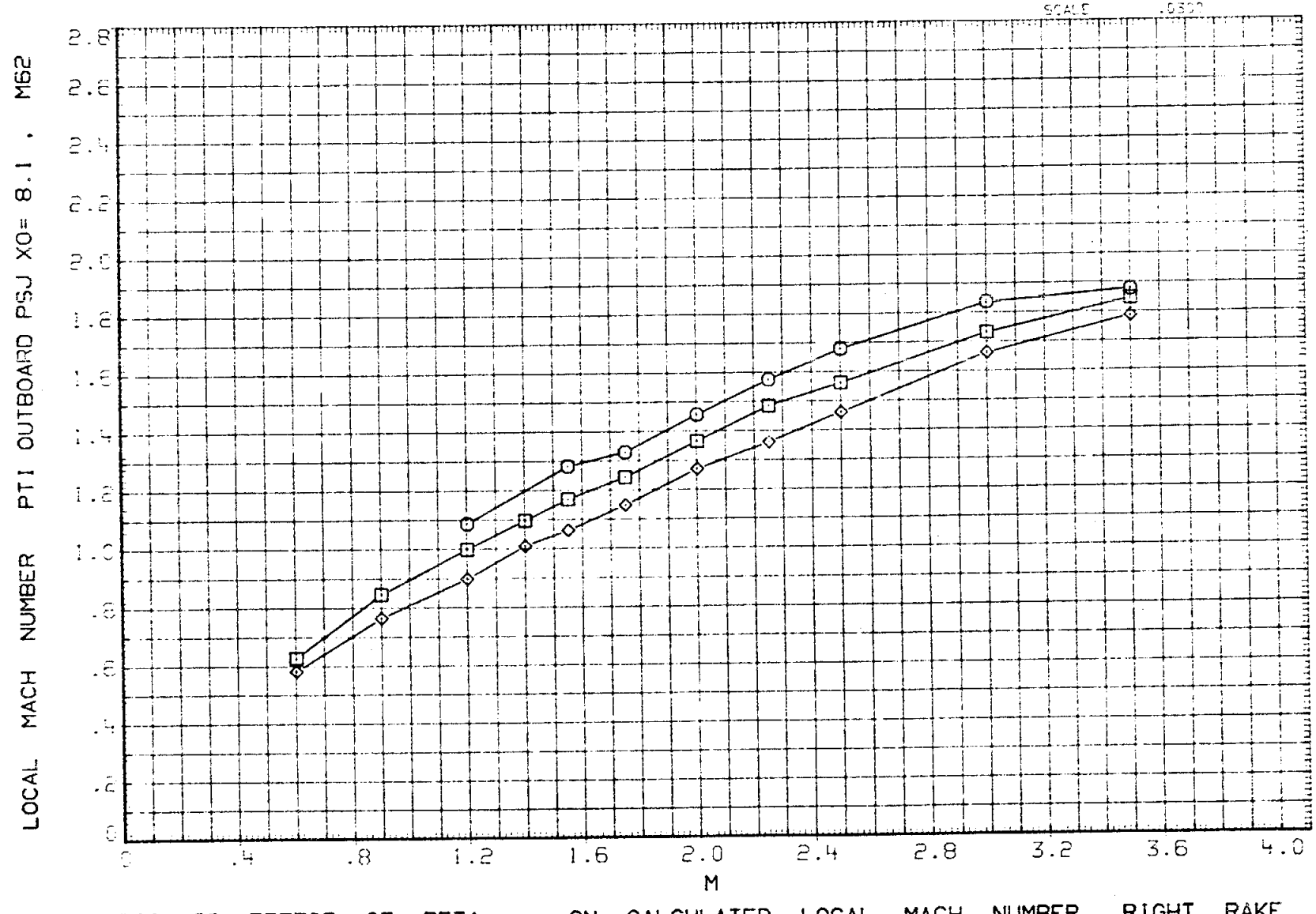


FIG. 22 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

(D) ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
FE7X03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7X05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7X07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7X01	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

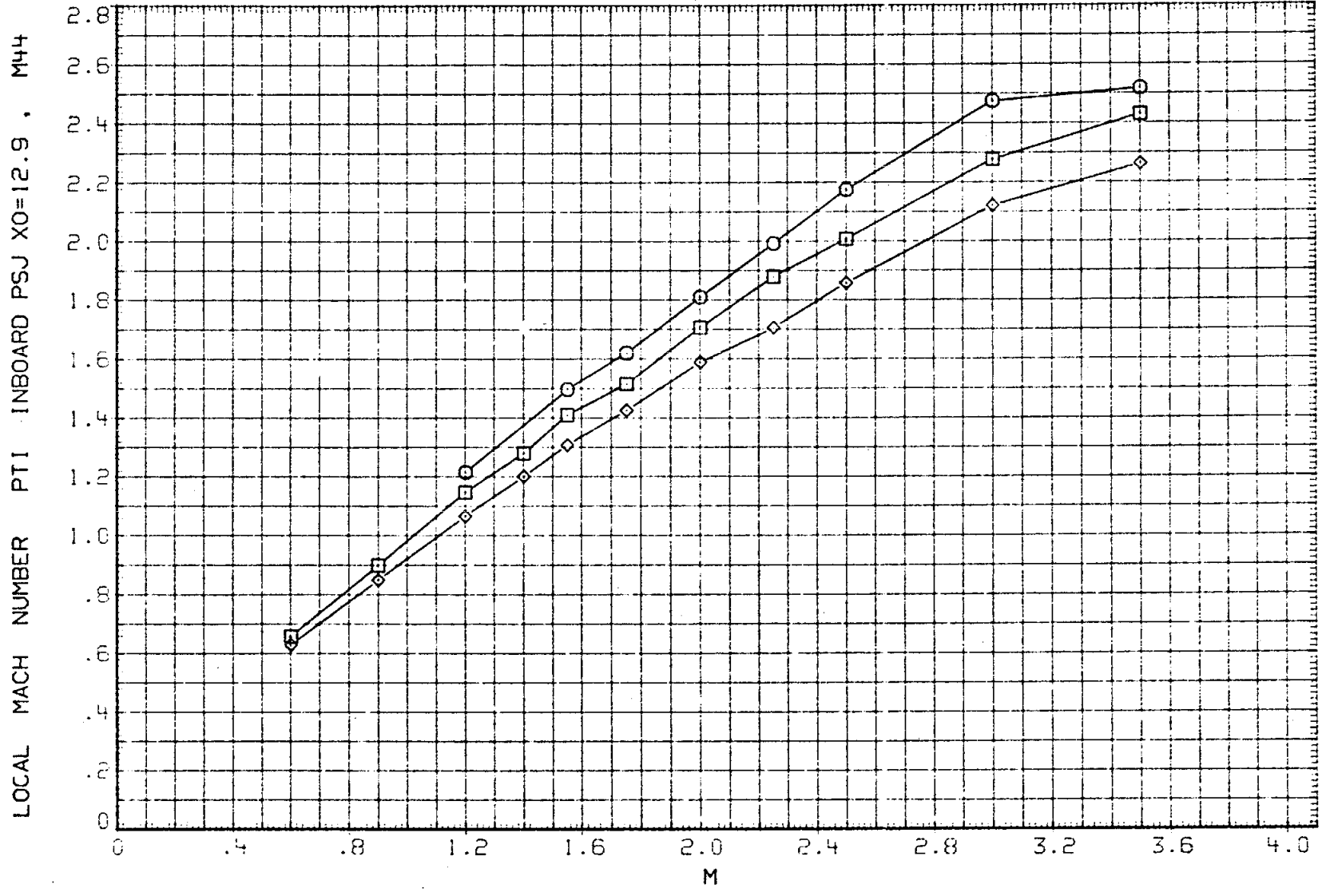


FIG. 22 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

(D)ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILERON	RUDDER
FE7X02	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7X05	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7X07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7X01	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
CREF	474.8000	IN.
BREF	936.6400	IN.
XMRP	1070.6200	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

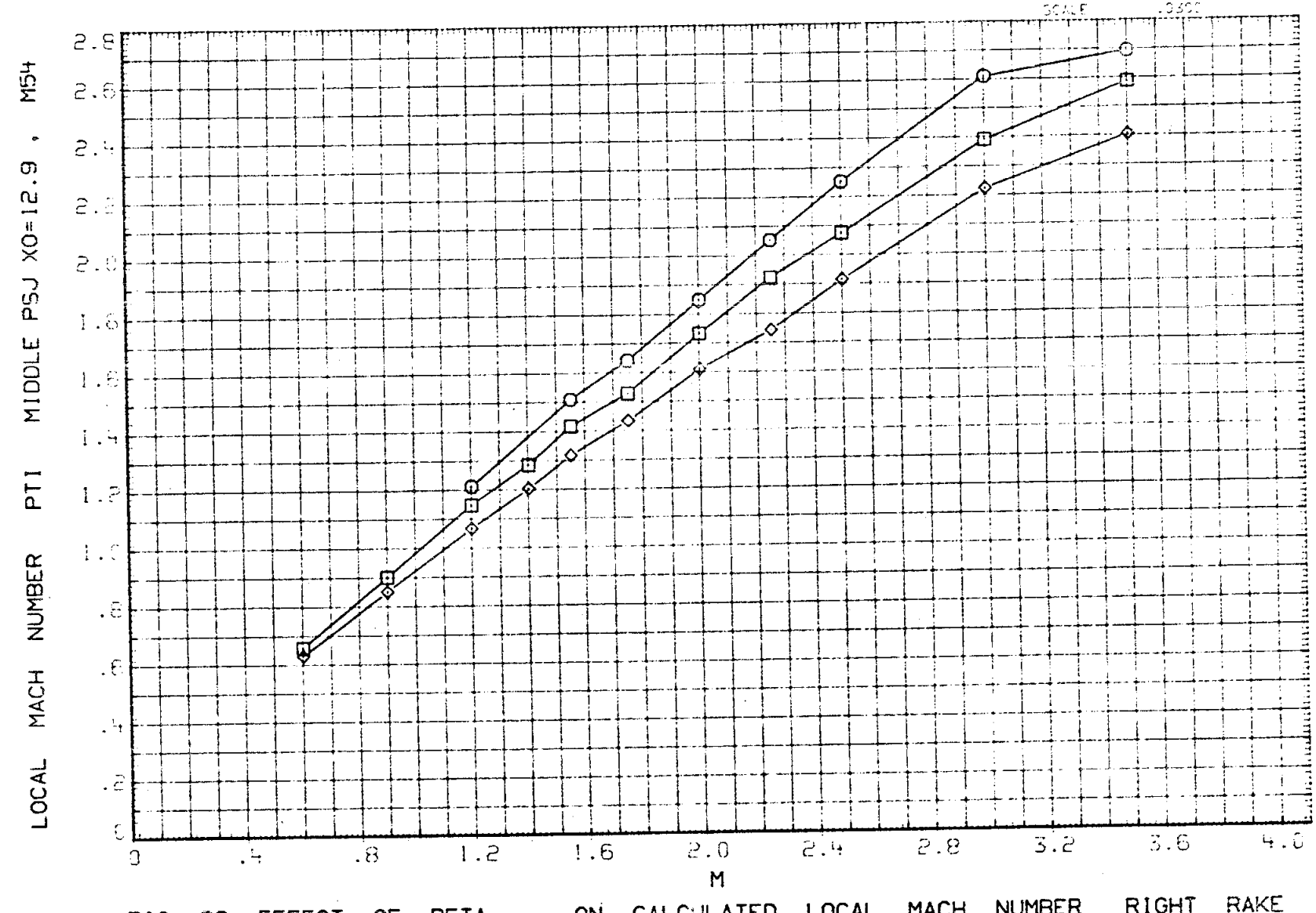


FIG. 22 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

(D)ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
FE7X03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7X05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7X07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7X01	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	935.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

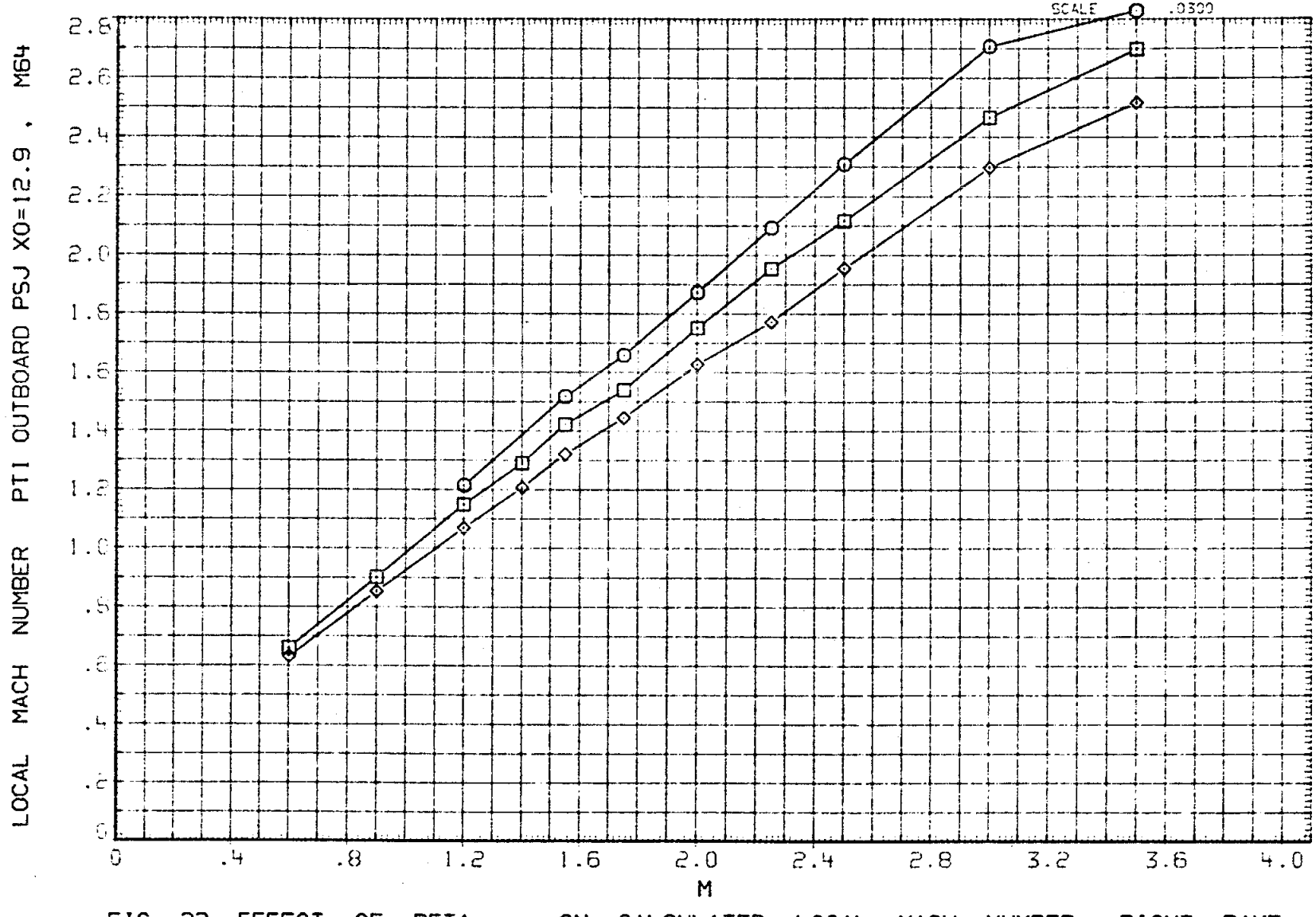


FIG. 22 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

(D)ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	ROLLAP
FE7X03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7X05	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7X07	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7X01	△	ARC 11-97-87-094 OA161 ORBITER + WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
SREF	5592.0000	SQ. IN.
LREF	474.8000	IN.
BREF	936.6500	IN.
XMRP	1076.0800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

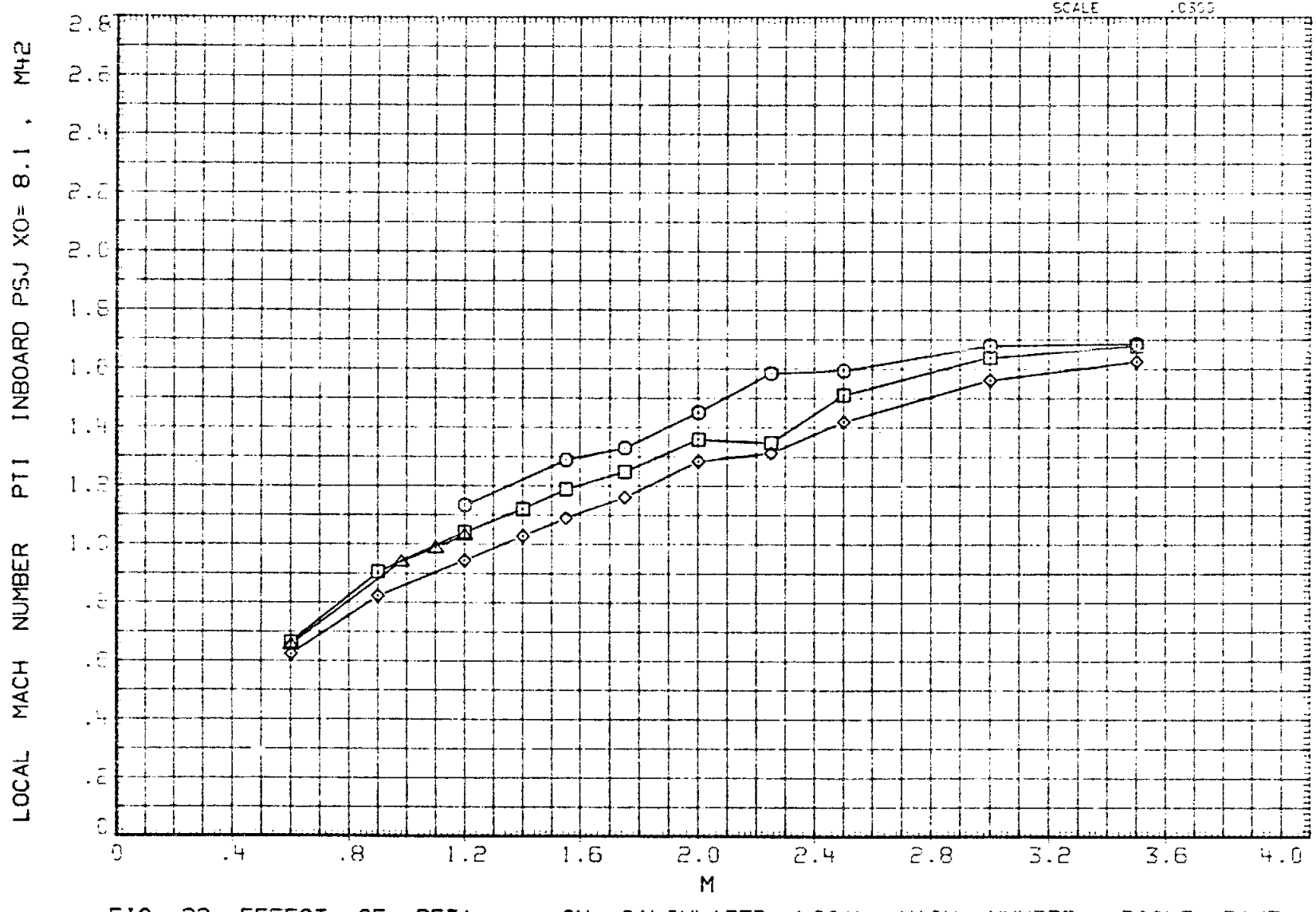


FIG. 22 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

(E)ALPHA = 24.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
FE7X03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7X05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7X07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7X01	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

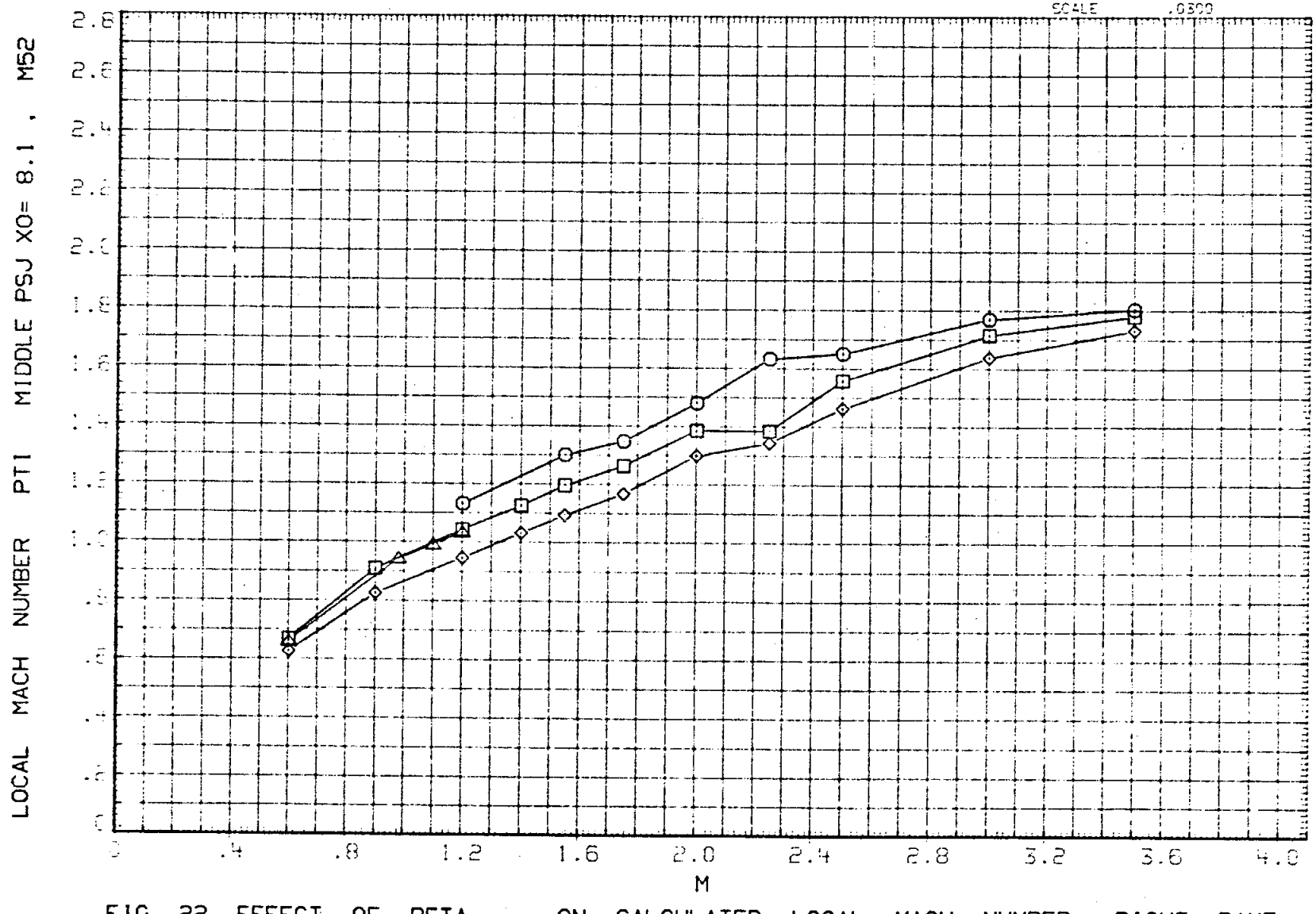


FIG. 22 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

(E)ALPHA = 24.00

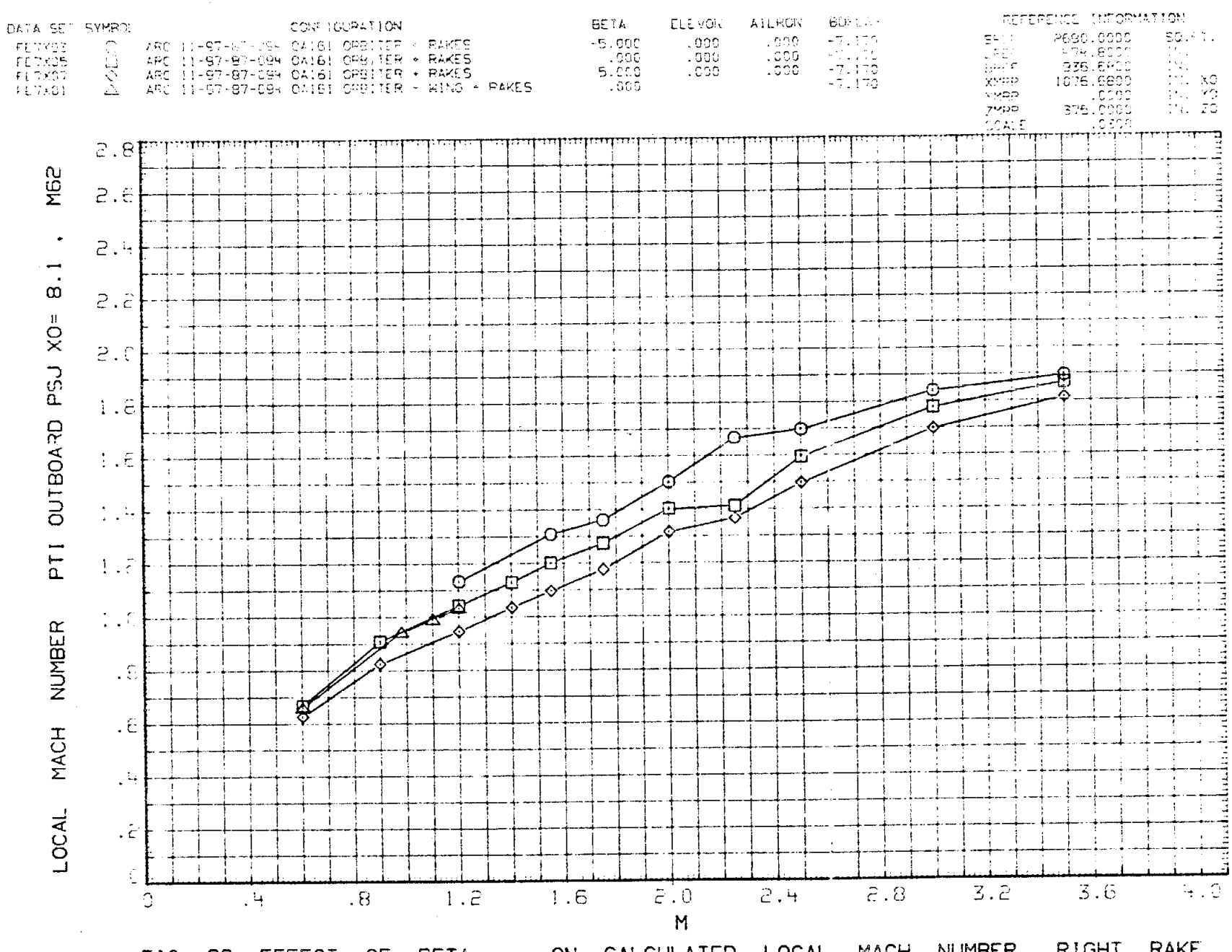


FIG. 22 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

(E)ALPHA = 24.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
FE7X03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7X05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7X07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7X01	△	ARC 11-97-87-094 OA161 ORBITER + WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

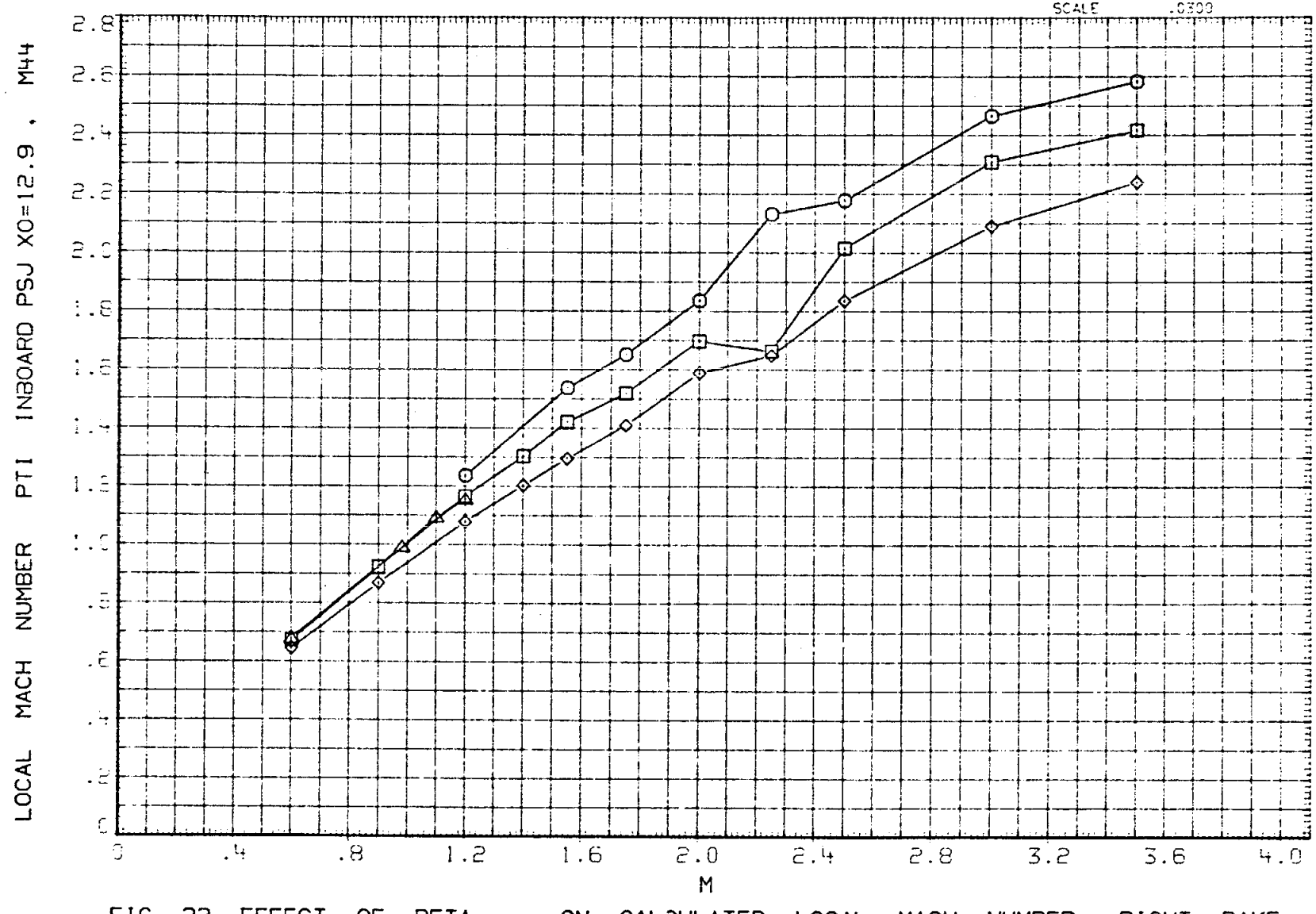


FIG. 22 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

(E)ALPHA = 24.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILERON	SPOILER
FE7X02	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-5.170
FE7X05	◇□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-5.170
FE7X07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-5.170
FE7X01	△	ARC 11-97-87-094 OA161 ORBITER + WING + RAKES	.000			-5.170

REFERENCE INFORMATION

SREF	2630.0000	SQ.FT.
LREF	924.8000	IN.
BREF	936.6800	IN.
XMRP	1076.5800	IN. XO
YMRP	.0000	IN. YO
ZMRP	376.0000	IN. ZO
SCALE	.0300	

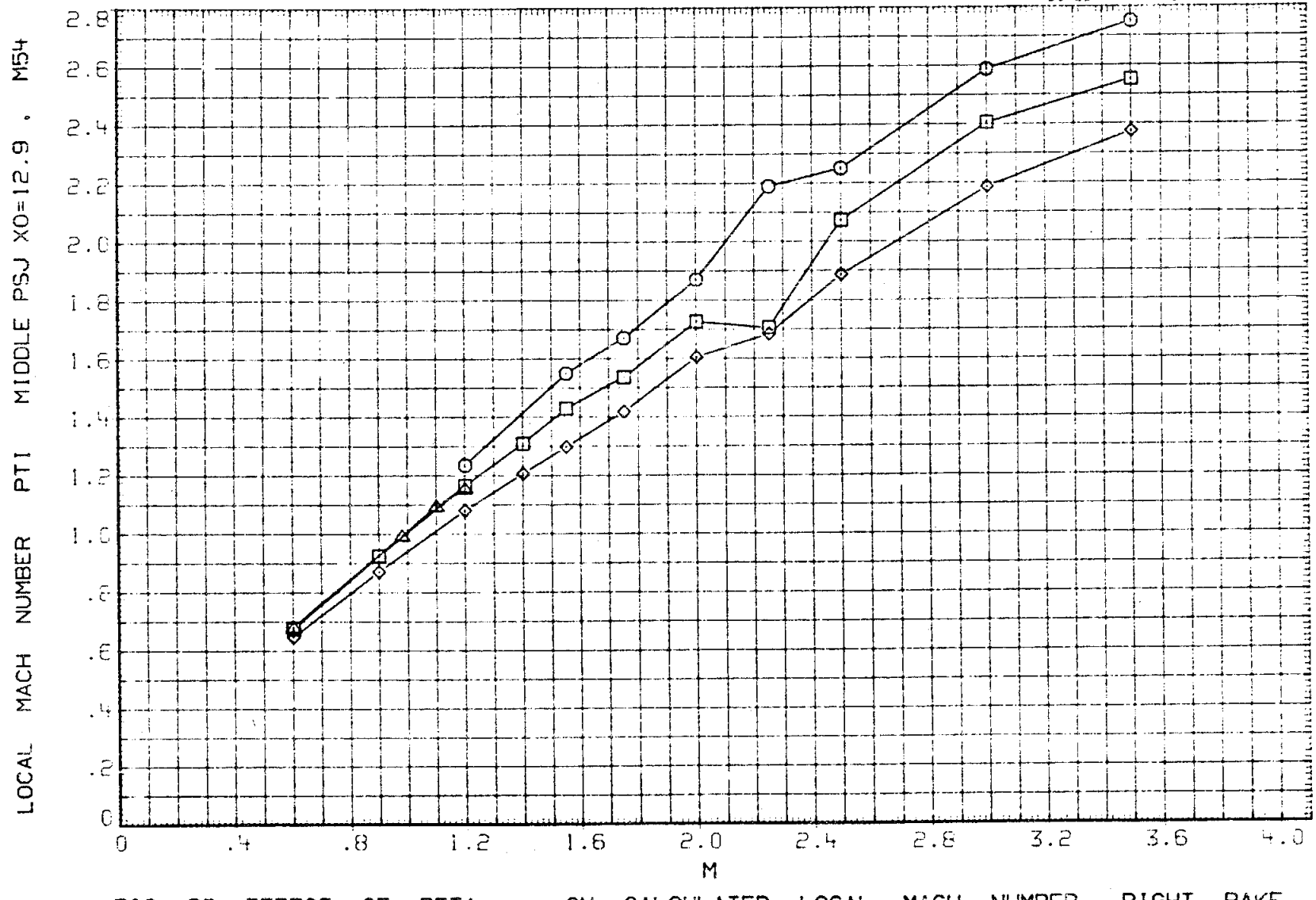


FIG. 22 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

(E)ALPHA = 24.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
FE7X03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7X05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7X07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7X01	△	ARC 11-97-87-094 OA161 ORBITER + WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

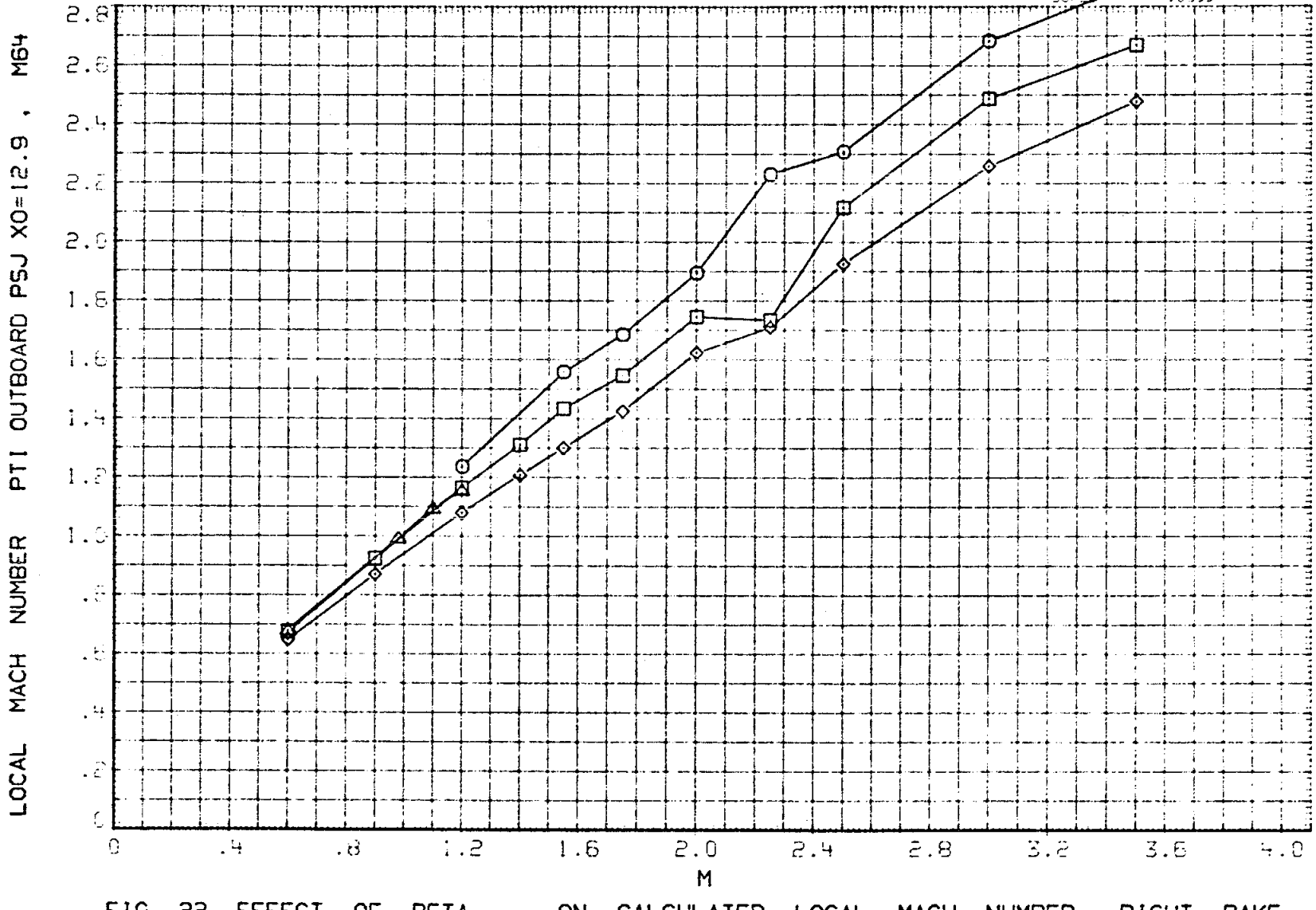


FIG. 22 EFFECT OF BETA ON CALCULATED LOCAL MACH NUMBER RIGHT RAKE

(E)ALPHA = 24.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BODY IP
FE78Q3	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE78Q5	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
FE78Q7	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE78Q1	△	ARC 11-97-87-094 OA161 ORBITER + WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ. IN.
LREF	474.8000	IN.
BREF	936.8800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0200	

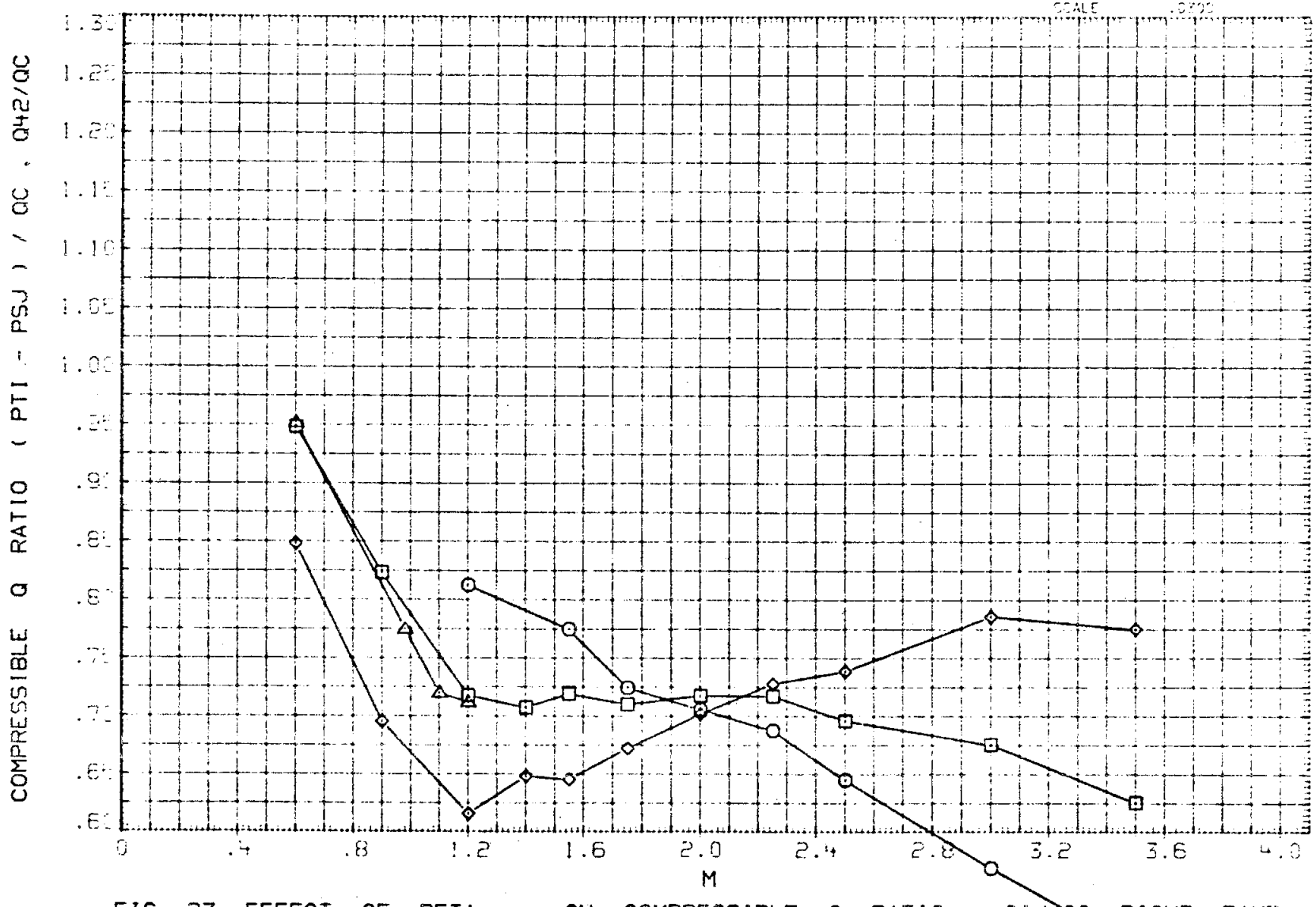


FIG. 23 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

(A)ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
FE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7807	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7801	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.6000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

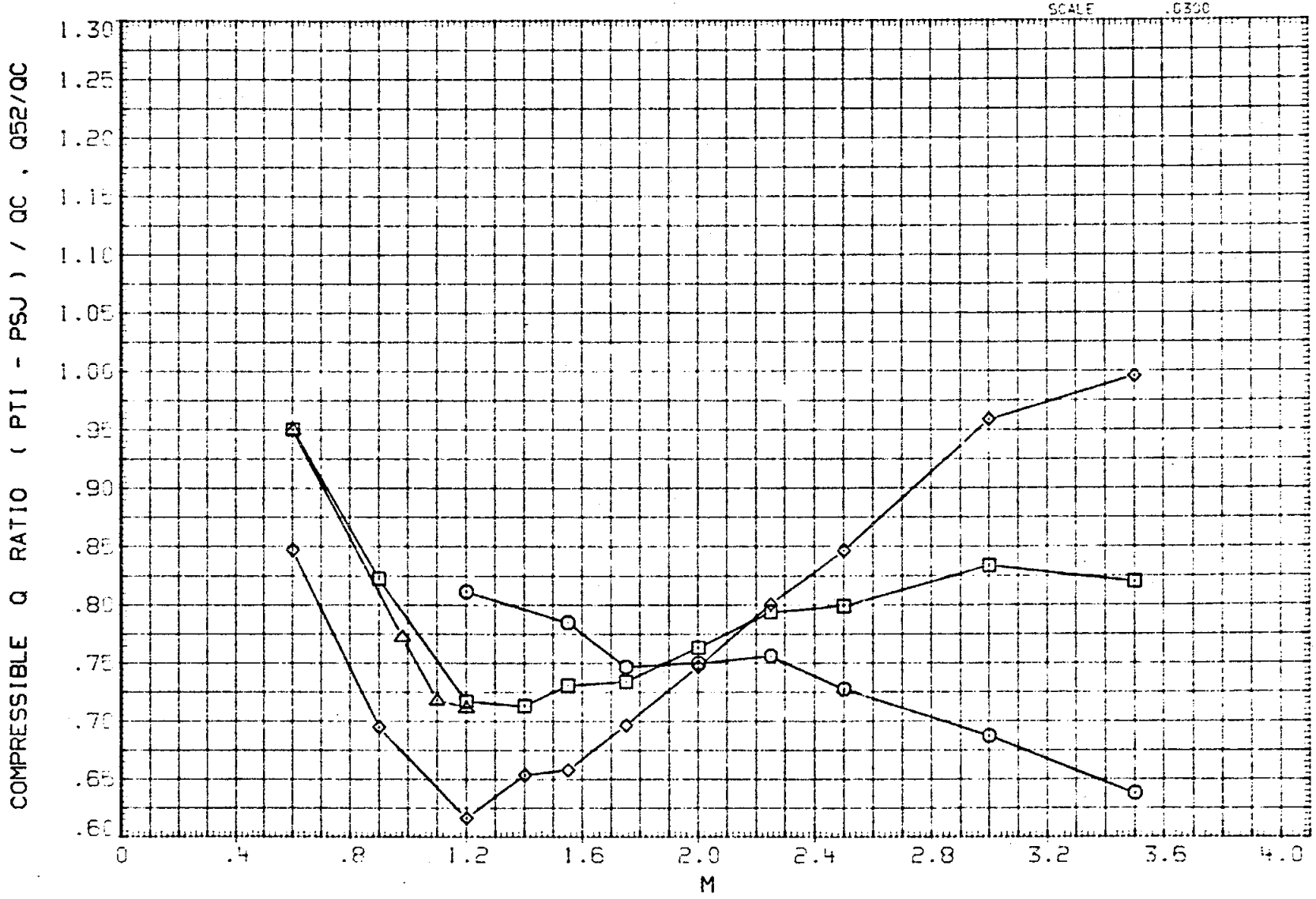


FIG. 23 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

(A)ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILERON	BODY FLAP
FE7B2X	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7B2S	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7B2T	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7B2U	△	ARC 11-97-87-094 OA161 ORBITER + WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ FT
LREF	474.6000	IN
BREF	936.8800	IN.
XMRP	1076.8800	IN. XO
YMRP	.0000	IN. YO
ZMRP	379.0000	IN. ZO
SCALE	.0000	

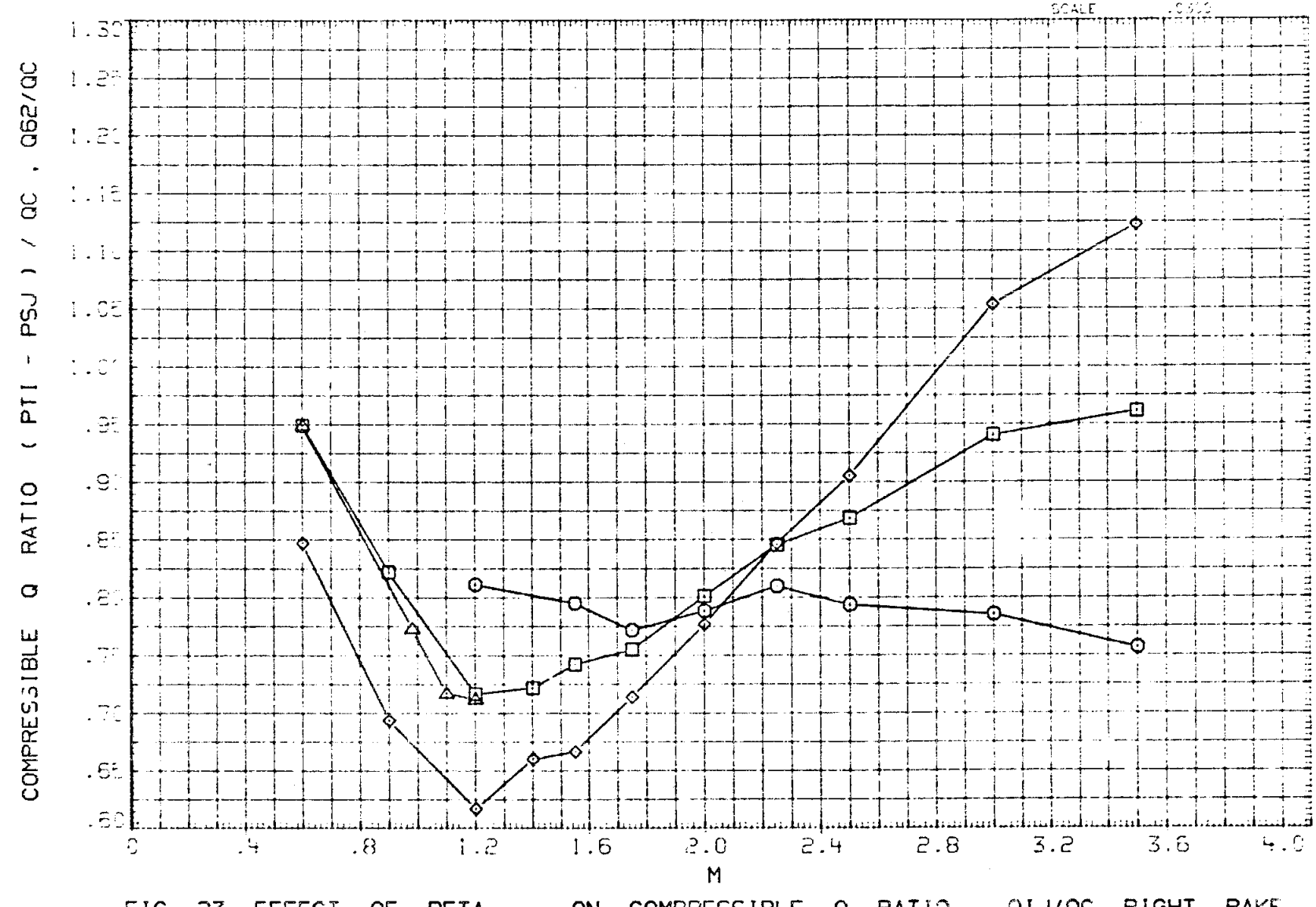


FIG. 23 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

(A) ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION
FE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES
FE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES
FE7807	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES
FE7801	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES

BETA	ELEVON	AILRON	BDFLAP
-5.000	.000	.000	-7.170
.000	.000	.000	-7.170
5.000	.000	.000	-7.170
.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

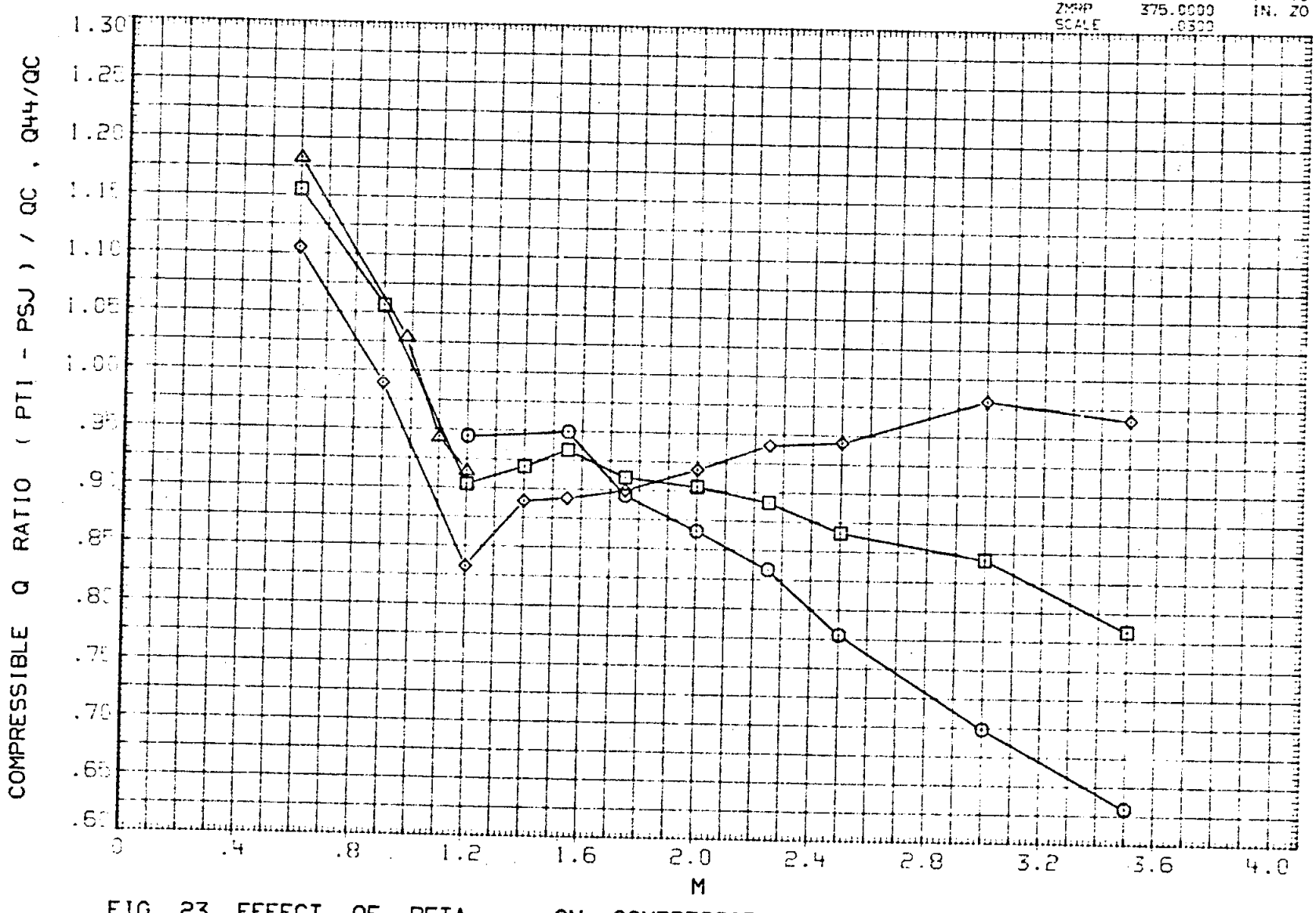


FIG. 23 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

(A) ALPHA = .00

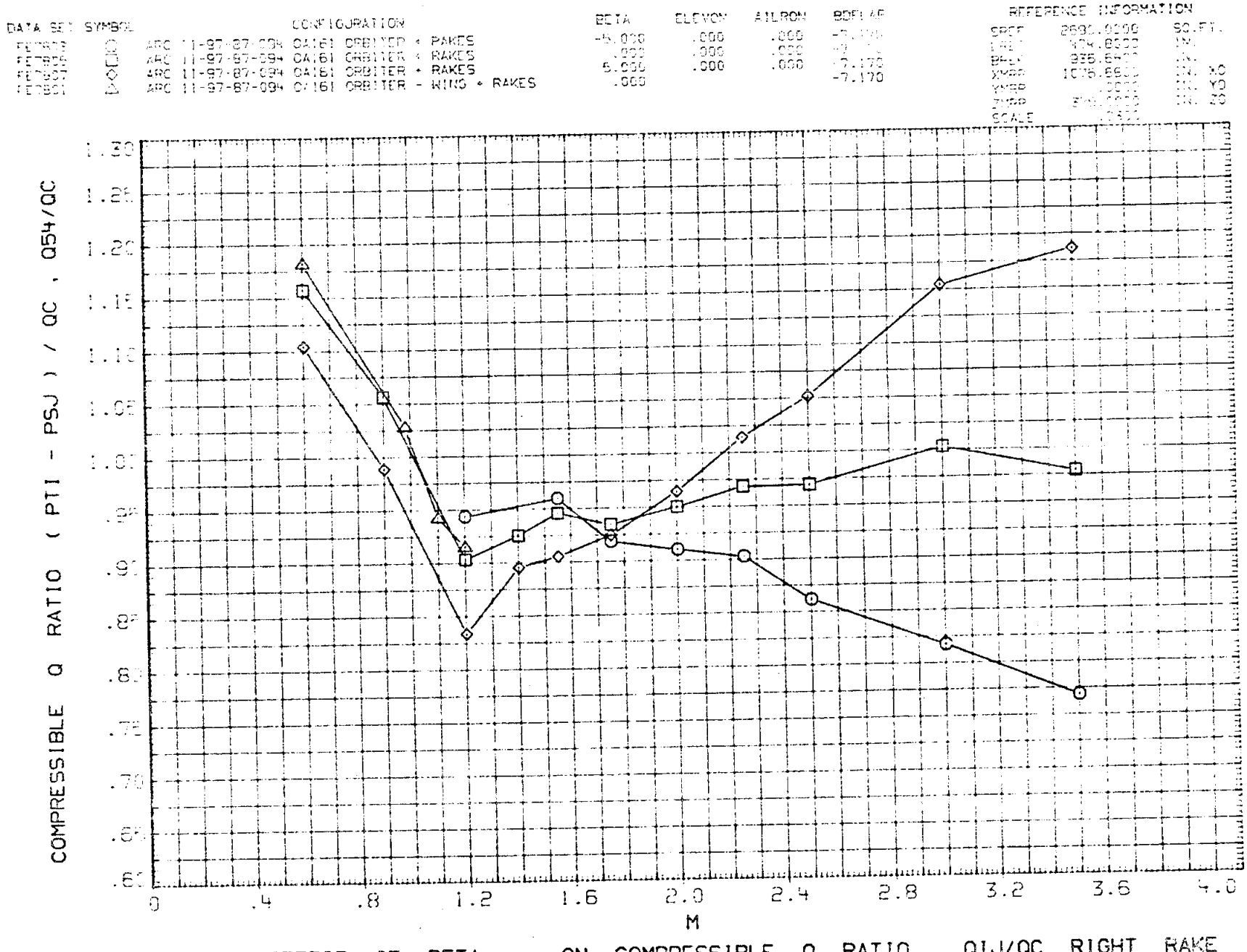


FIG. 23 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

(A) ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
FE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7805	◇□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7807		ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7801	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6900	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

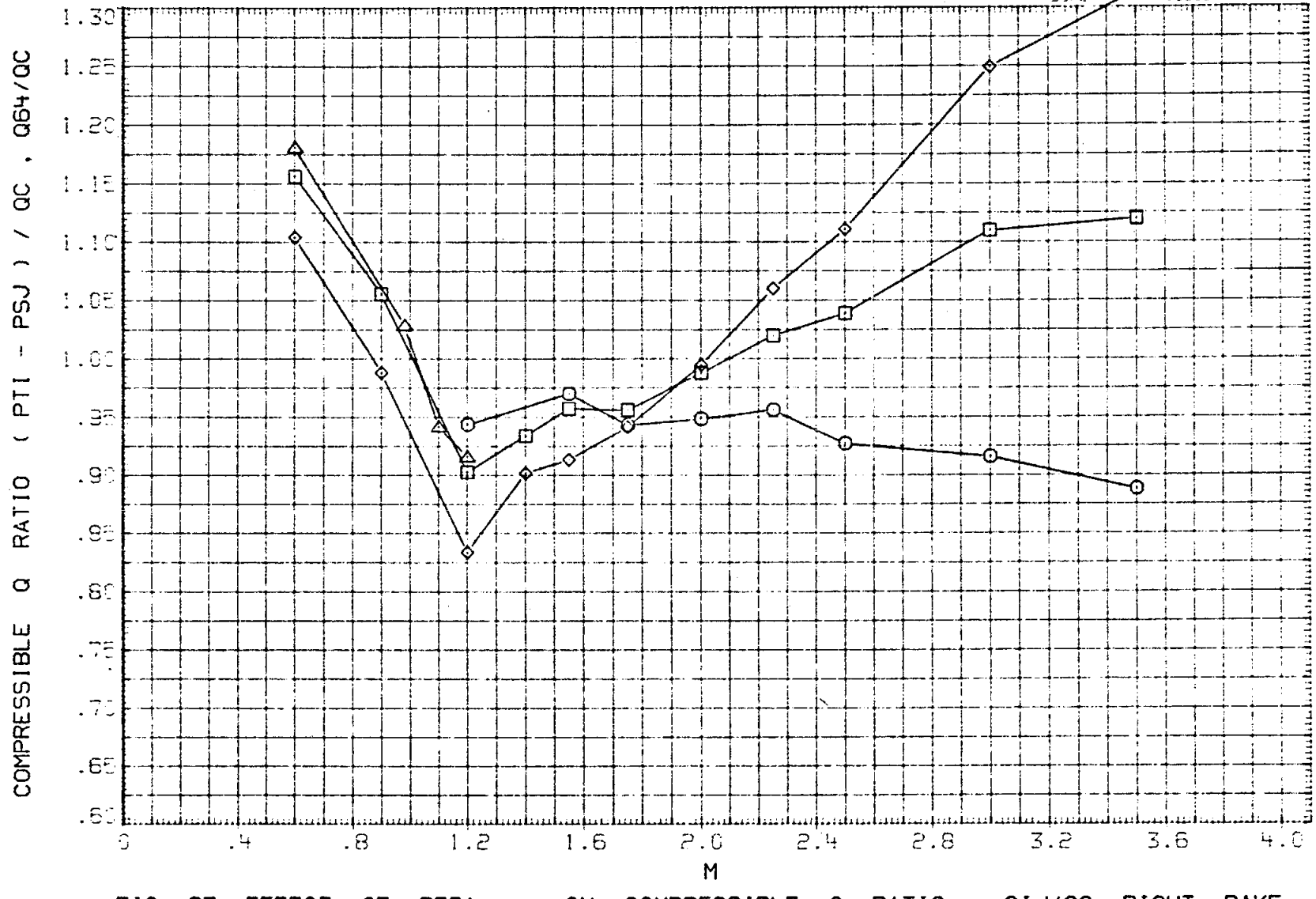


FIG. 23 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

(A) ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
FE7B03	○	ARC 11-97-87-094 DATA: ORBITER + RAKES	-5.000	.000	.000	-7.70
FE7B05	□	ARC 11-97-87-094 DATA: ORBITER + RAKES	.000	.000	.000	-7.70
FE7B07	◇	ARC 11-97-87-094 DATA: ORBITER + RAKES	5.000	.000	.000	-7.70
FE7B01	△	DATA NOT AVAILABLE	.000			

REFERENCE INFORMATION

SREF	2686.0000	SQ.FT.
LREF	1.0000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

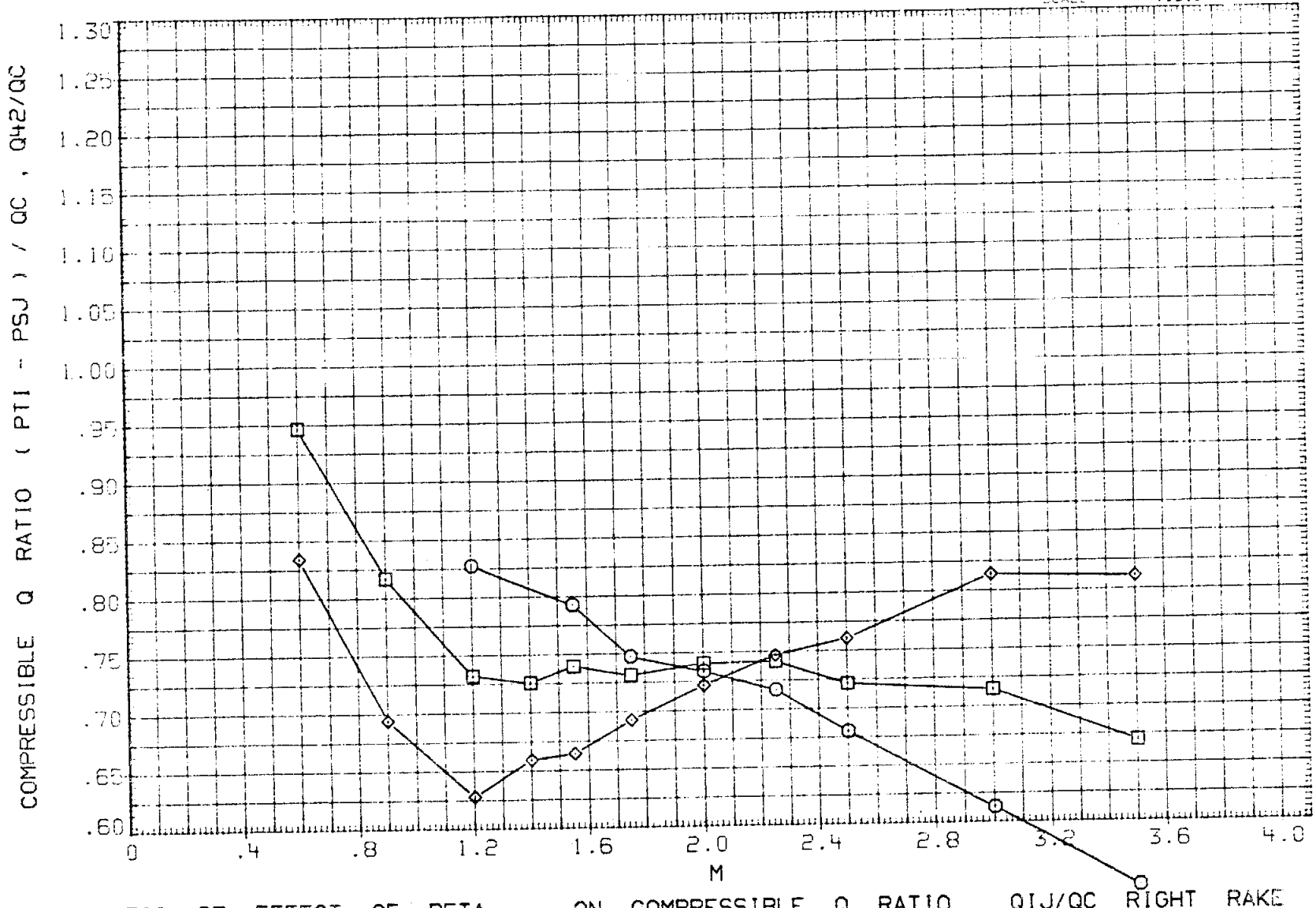


FIG. 23 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

(B)ALPHA = 6.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
FE7B03	○	ARC 11-97-87-094 0A161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7B05	□	ARC 11-97-87-094 0A161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7B07	◇	ARC 11-97-87-094 0A161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7B01	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

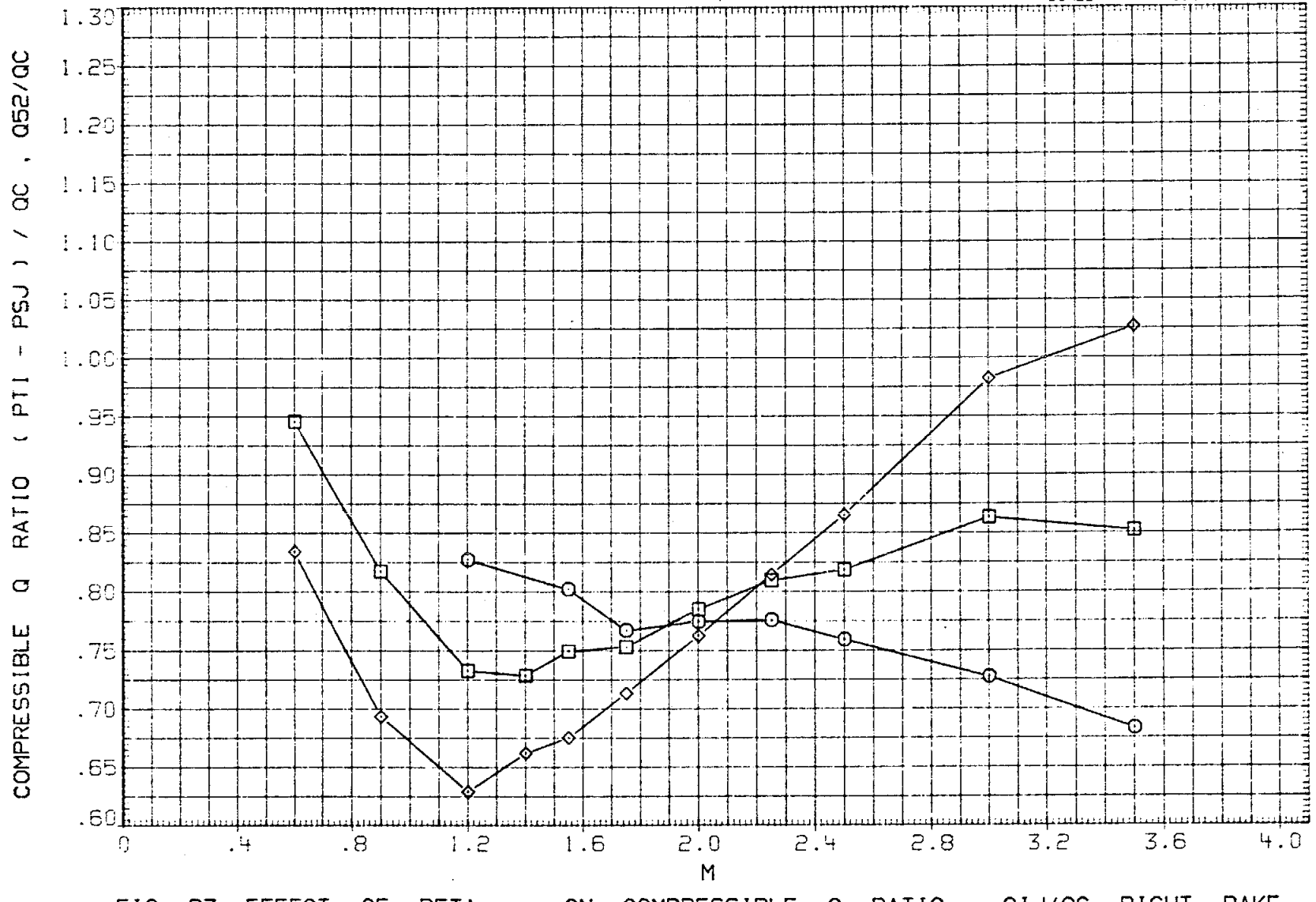


FIG. 23 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

(B)ALPHA = 6.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
FE78035	□	ARC 11-97-87-094 OA181 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE78036	◇	ARC 11-97-87-094 OA181 ORBITER + RAKES	.000	.000	.000	-7.170
FE78037	△	ARC 11-97-87-094 OA181 ORBITER + RAKES	5.000	.000	.000	-7.170
FE78051		DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	935.6800	IN.
XMRP	1076.6600	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

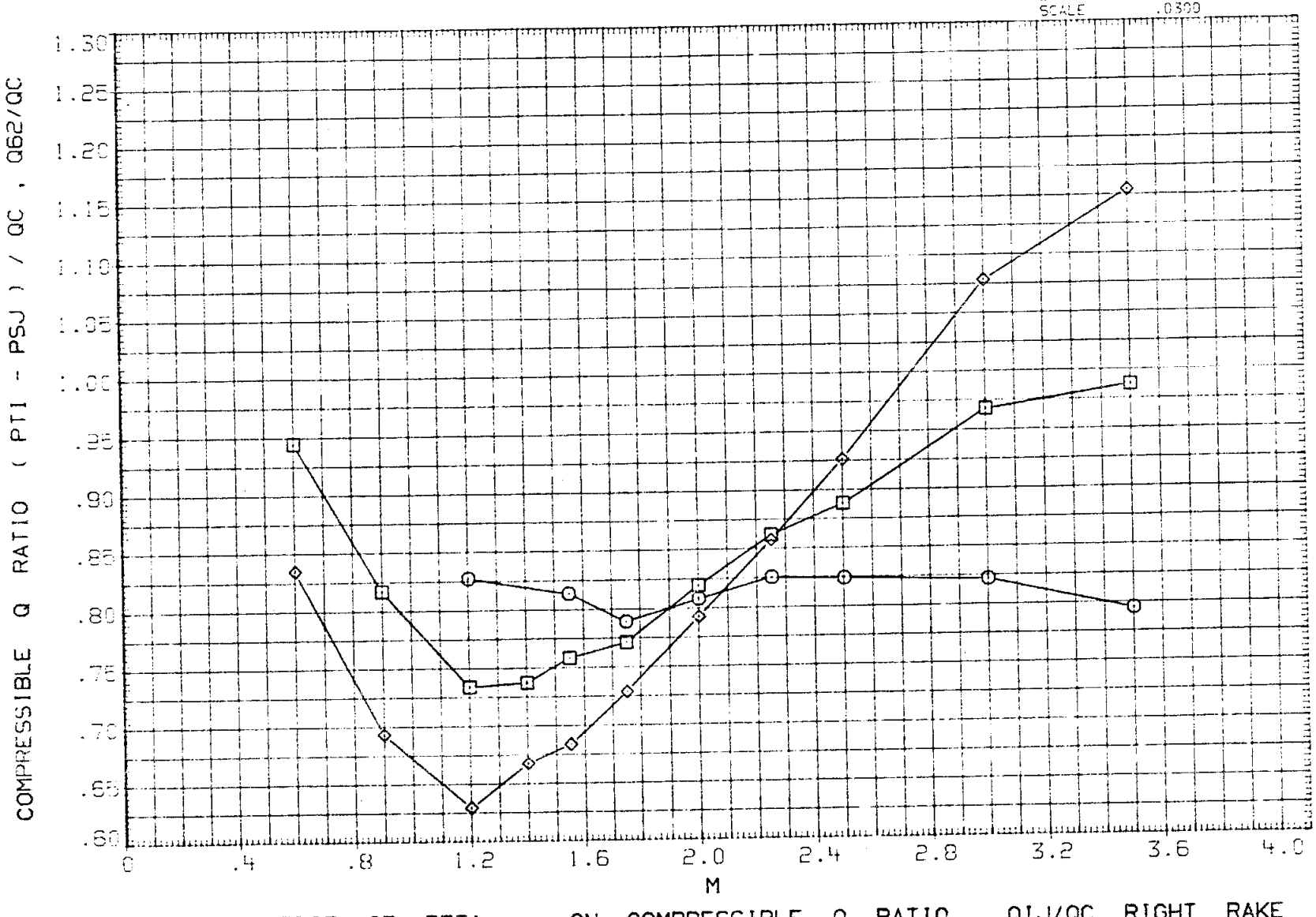


FIG. 23 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

(B) ALPHA = 6.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
FE7R03	○	ARC 11-97-97-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7R05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7R07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7R01	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

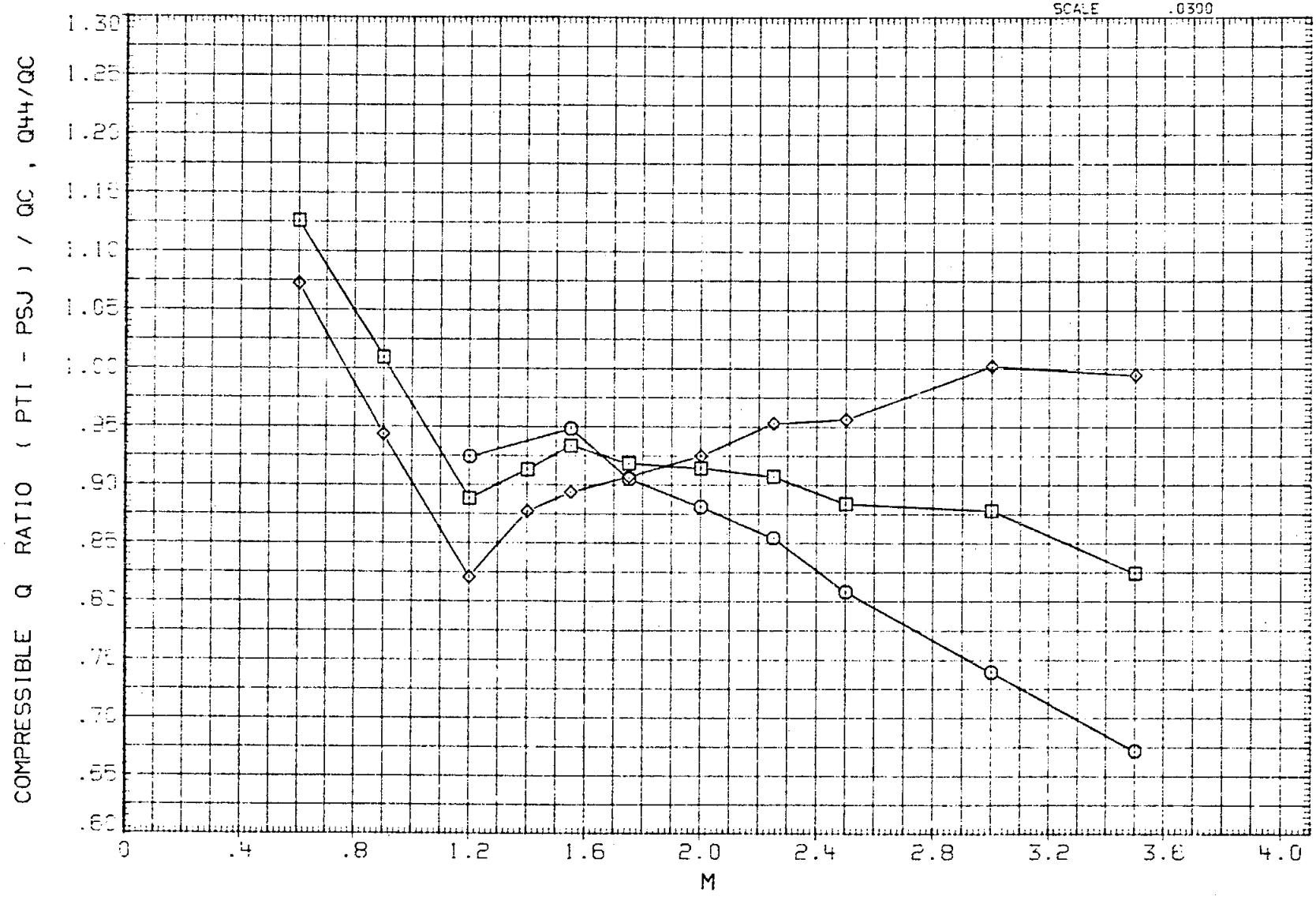


FIG. 23 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

(B) ALPHA = 6.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILERON	BOFLAP
FE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7438	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7809	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7801	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	674.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

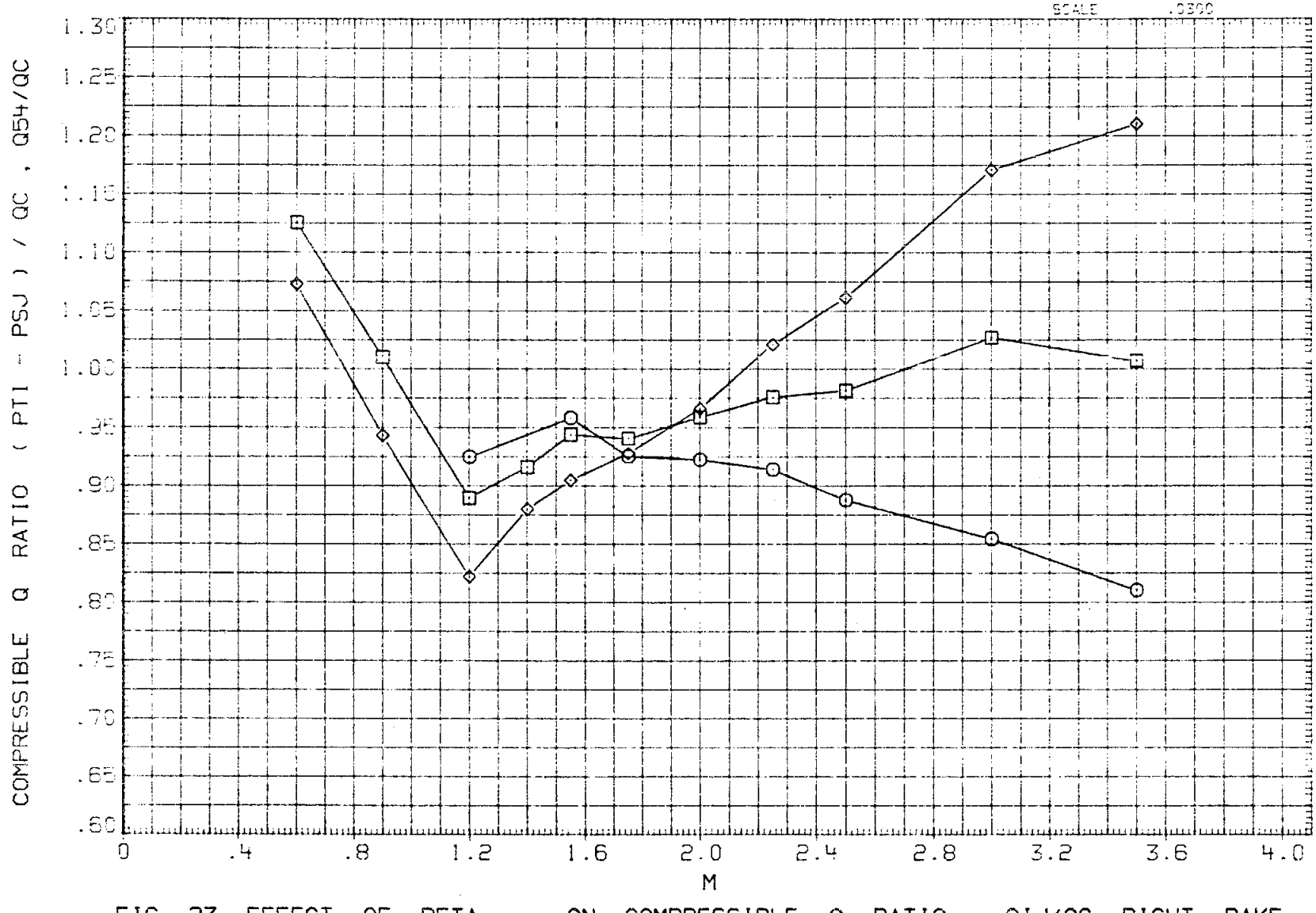


FIG. 23 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

(B)ALPHA = 6.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
FE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7804	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7801	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	935.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

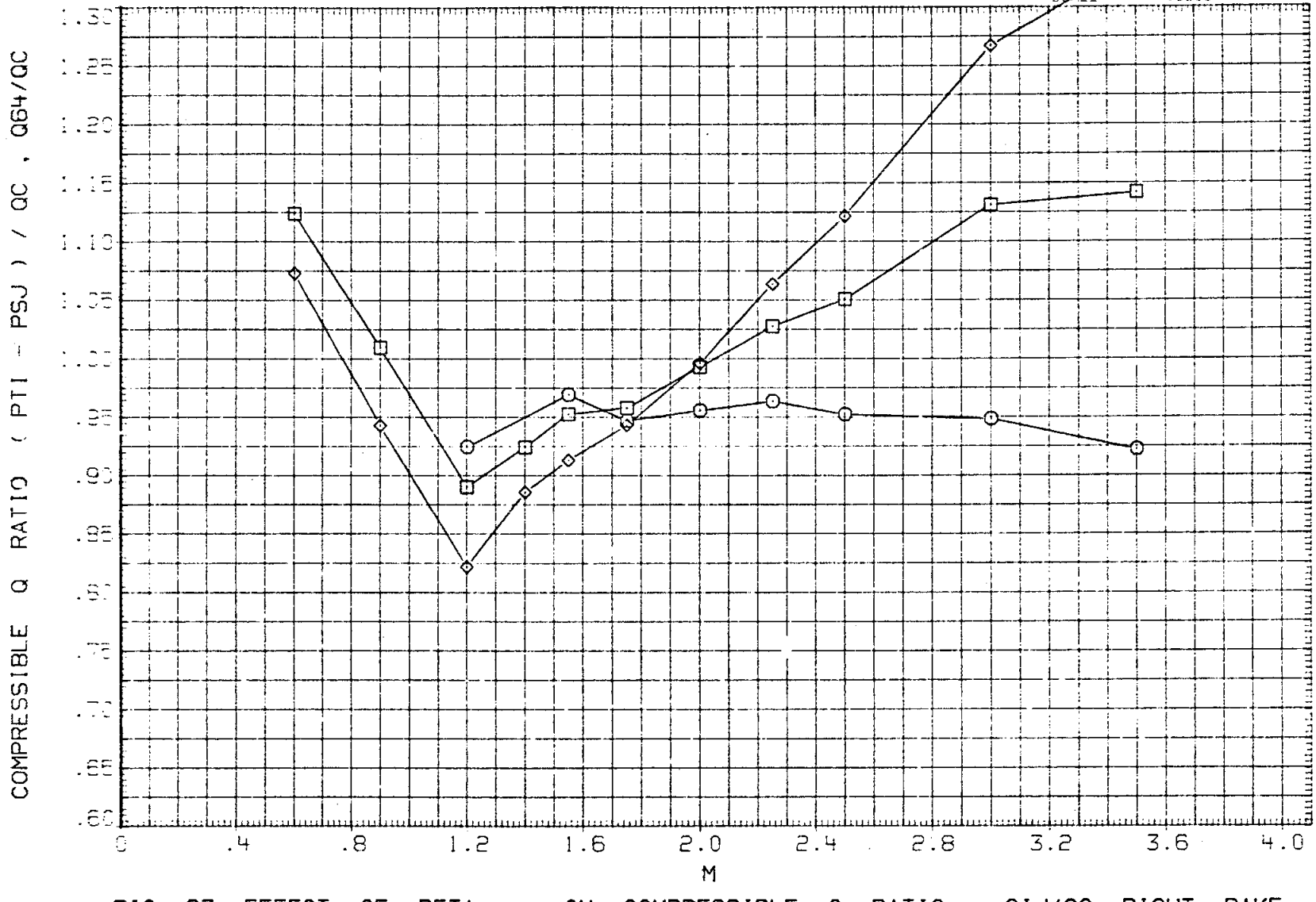


FIG. 23 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

(B)ALPHA = 5.00

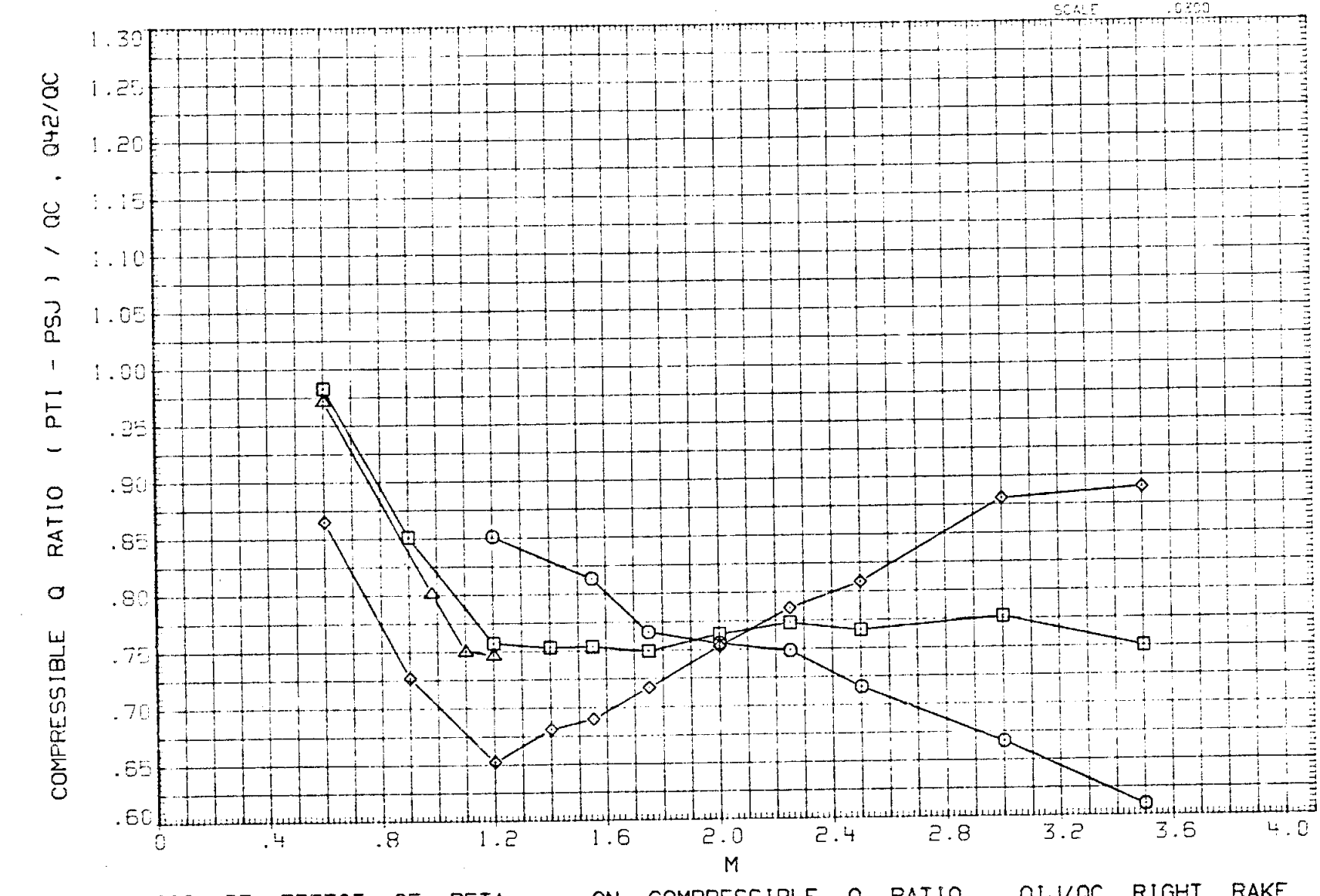


FIG. 23 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

(C) ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
FE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7807	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7801	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

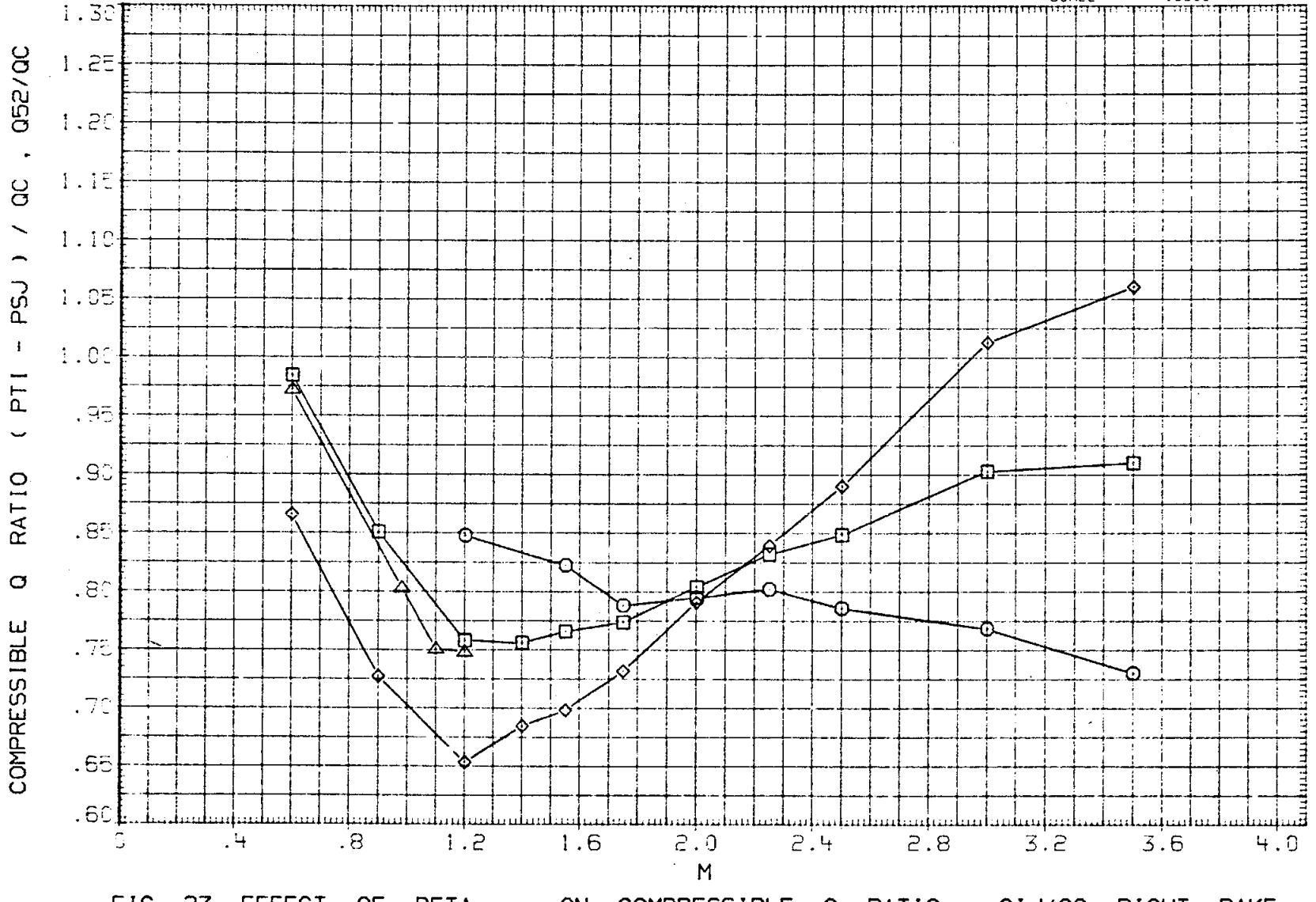


FIG. 23 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

(C) ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
[illegible]	[illegible]	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7 170
[illegible]	[illegible]	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	[illegible]
[illegible]	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7 170
[illegible]	△	ARC 11-97-87-094 OA161 ORBITER + WING + RAKES	.000			-7 170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	779.9000	IN.
BREF	996.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

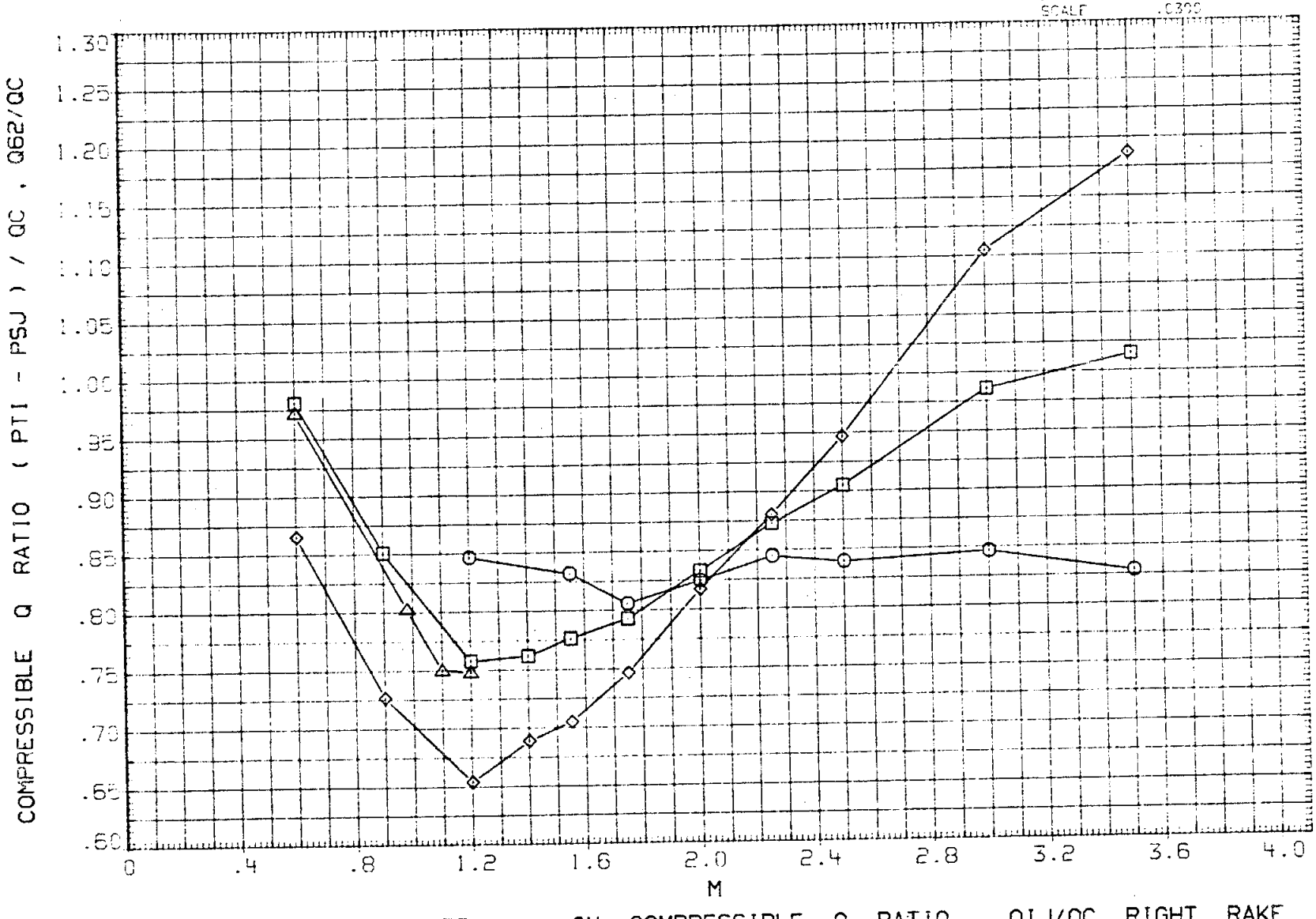


FIG. 23 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

(C)ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
FE7803	○	ARC 11-97-87-094 0A161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7805	◇□	ARC 11-97-87-094 0A161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7807		ARC 11-97-87-094 0A161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7801	△	ARC 11-97-87-094 0A161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	935.5800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

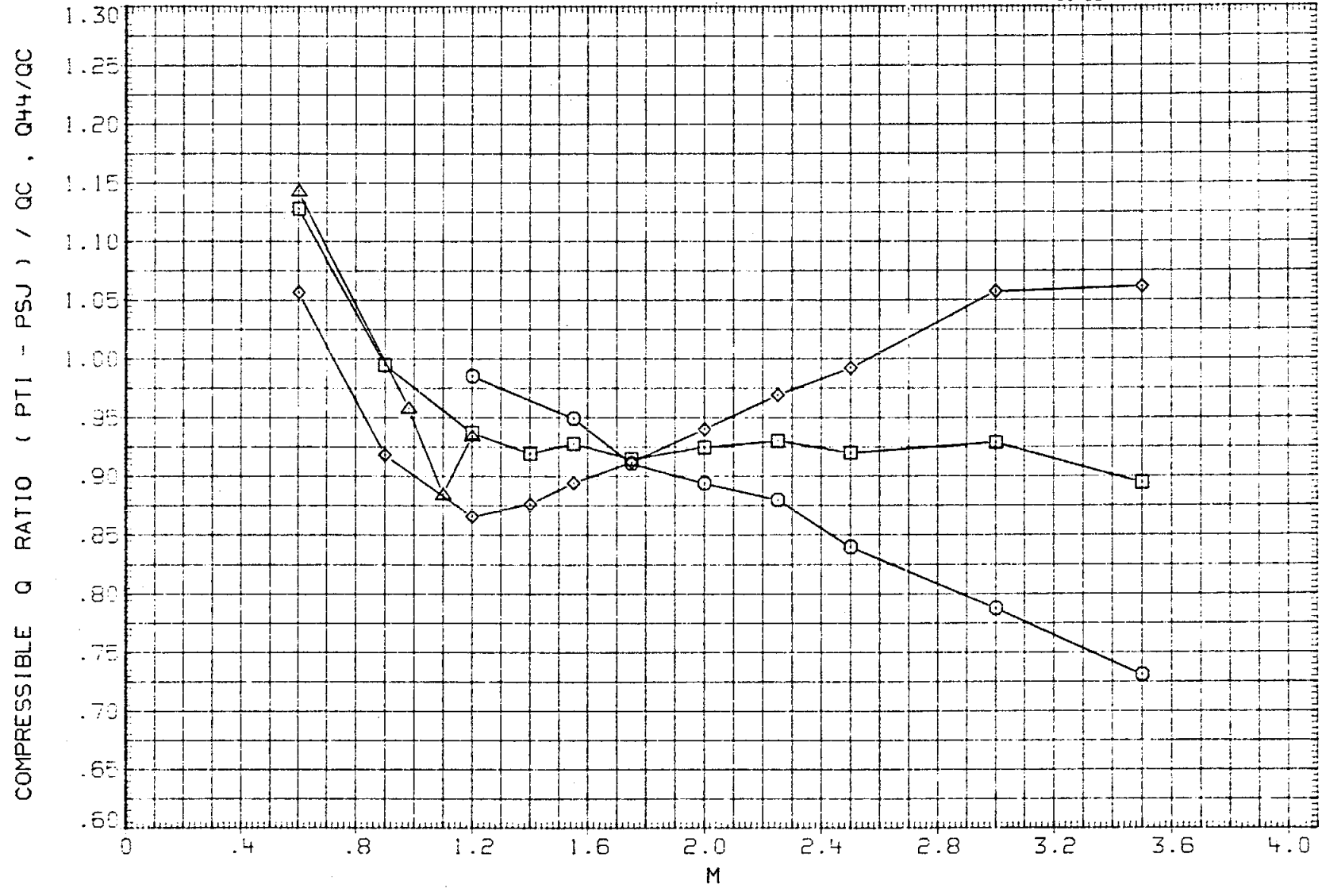


FIG. 23 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

(C) ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	RDFLAP
FE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7807	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7801	△	ARC 11-97-87-094 OA161 ORBITER + WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.6000	IN.
BREF	935.6800	IN.
XMRP	1076.5800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0500	

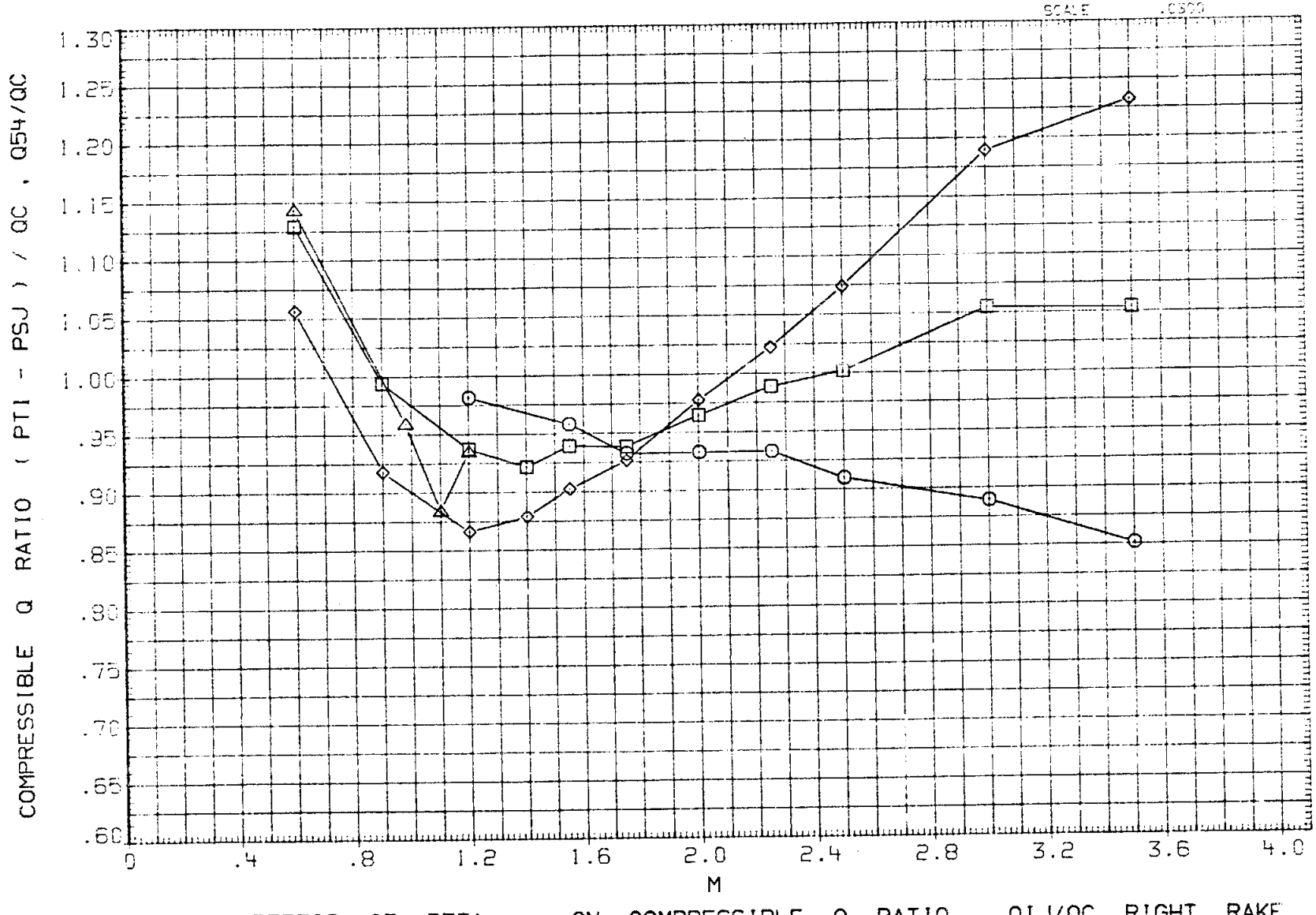


FIG. 23 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

(C)ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
FE7803	○	ARC 11-97-87-094 0A161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7805	□	ARC 11-97-87-094 0A161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7807	◇	ARC 11-97-87-094 0A161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7801	△	ARC 11-97-87-094 0A161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

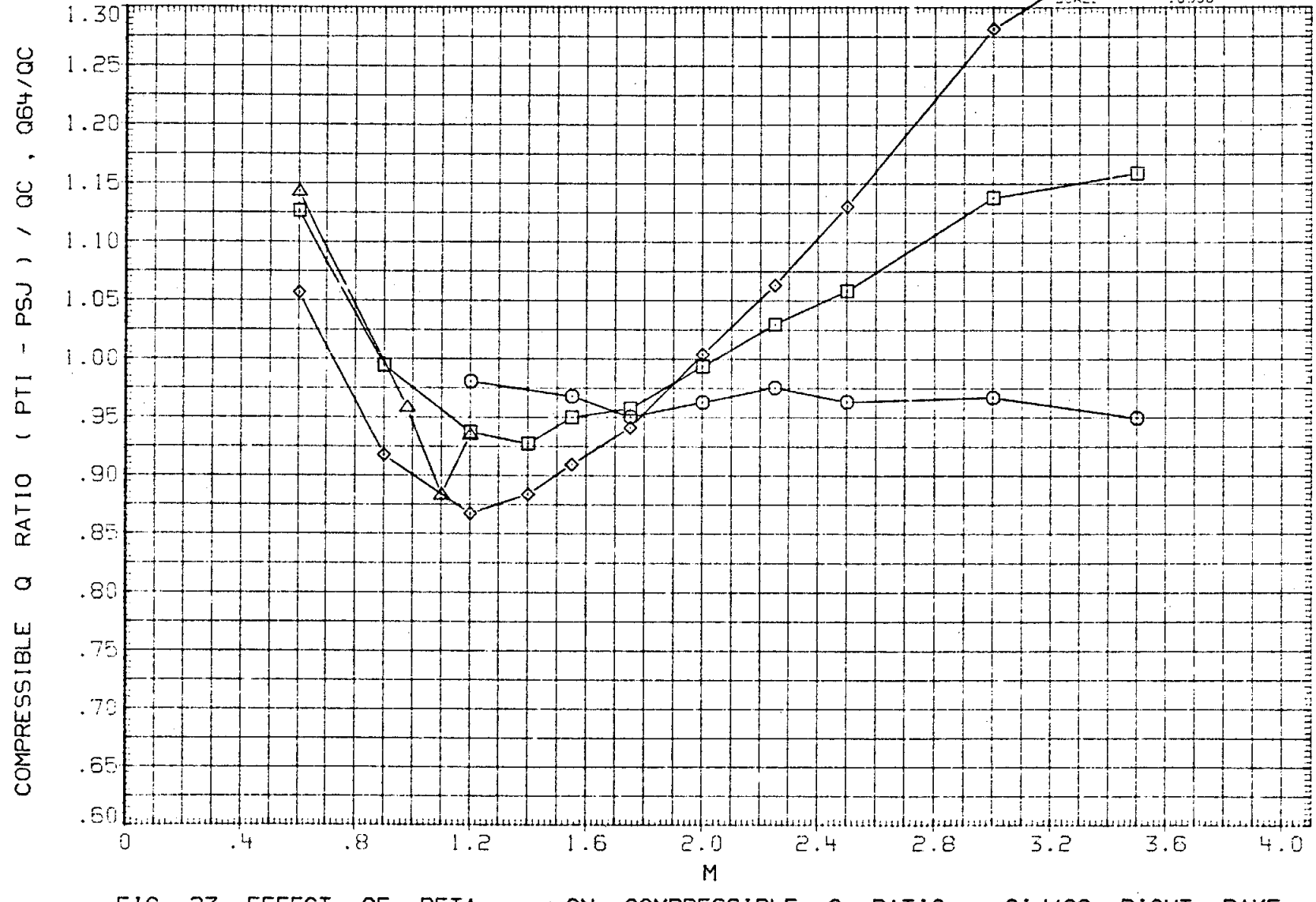


FIG. 23 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

(C)ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILERON	BOFLAP
FE7803	□	ARC 11-97-87-094 0A161 ORBITER + RAKES	-5.000	.000	.000	-7.179
FE7805	◇	ARC 11-97-87-094 0A161 ORBITER + RAKES	.000	.000	.000	-7.179
FE7804	◇	ARC 11-97-87-094 0A161 ORBITER + RAKES	5.000	.000	.000	-7.179
FE7801	△	DATA NOT AVAILABLE	.000			-7.179

REFERENCE INFORMATION		
SREF	2600.0000	SQ.FT.
LREF	474.8000	IN.
BREF	956.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

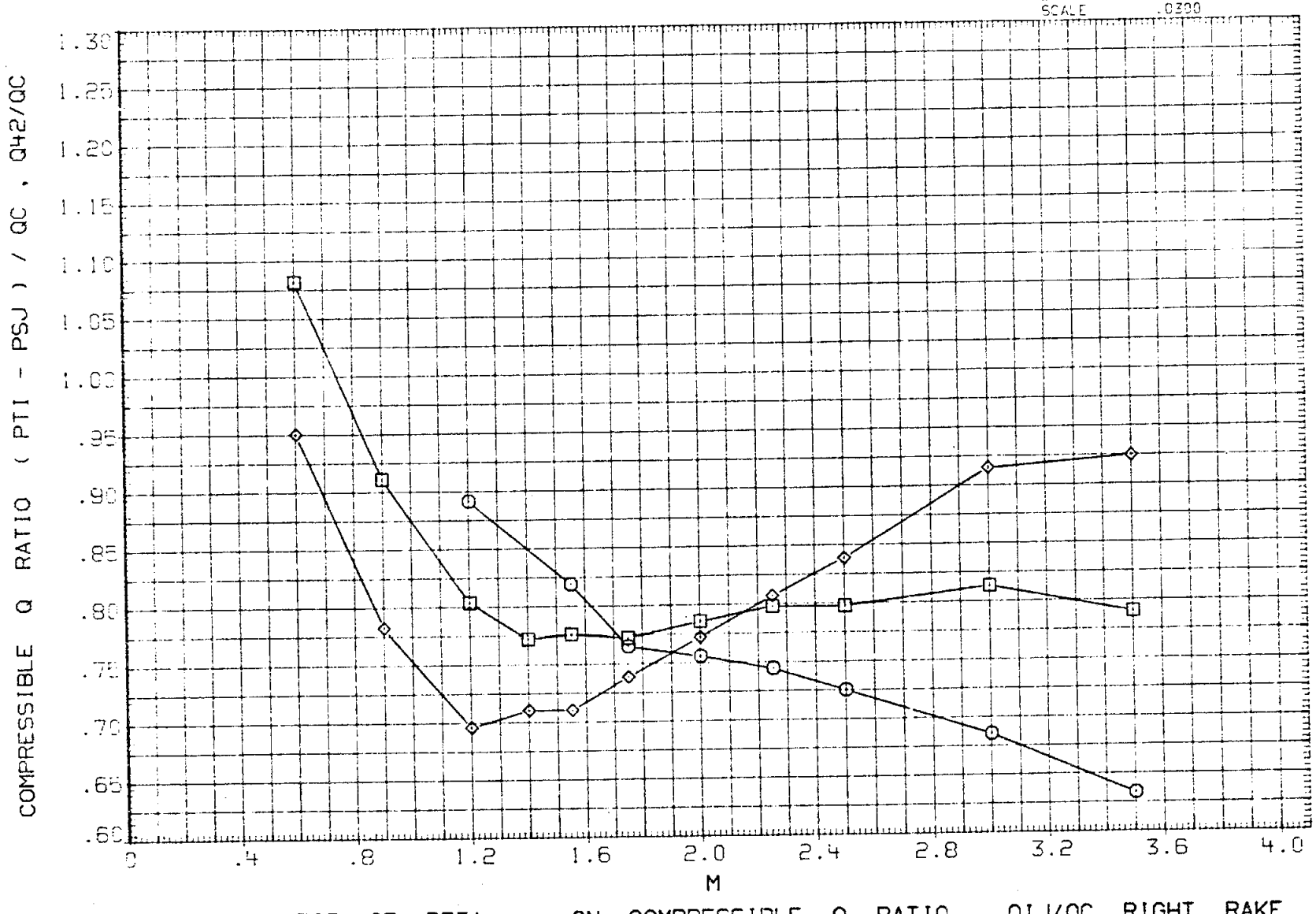


FIG. 23 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

(D) ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
FE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7807	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7801	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

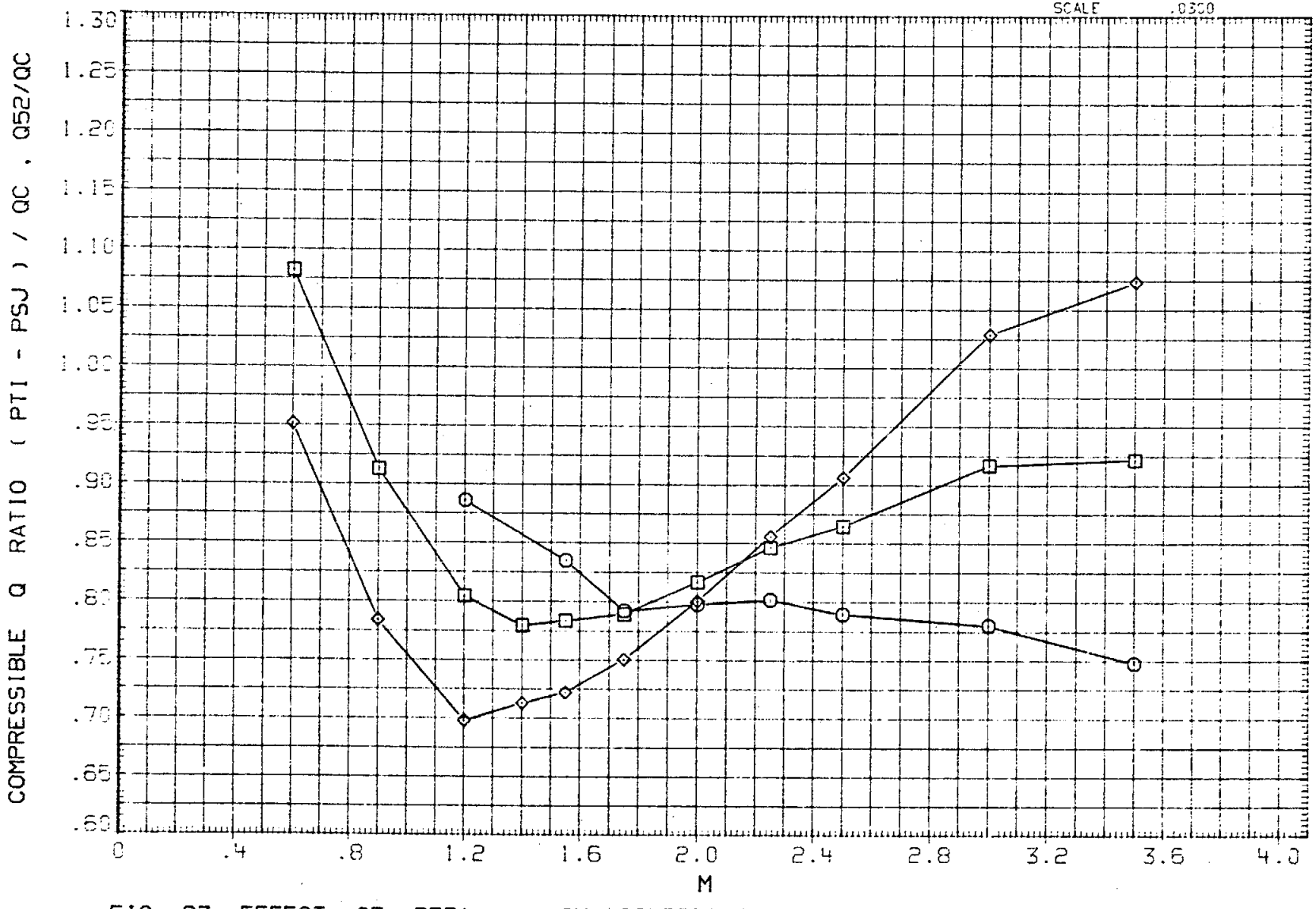


FIG. 23 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

(D)ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	RUDDER
FET805	□	ARC 11-97-87-094 CA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FET806	◇	ARC 11-97-87-094 CA161 ORBITER + RAKES	.000	.000	.000	-7.170
FET807	○	ARC 11-97-87-094 CA161 ORBITER + RAKES	5.000	.000	.000	-7.170
FET801	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	471.8000	IN.
BREF	936.5800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

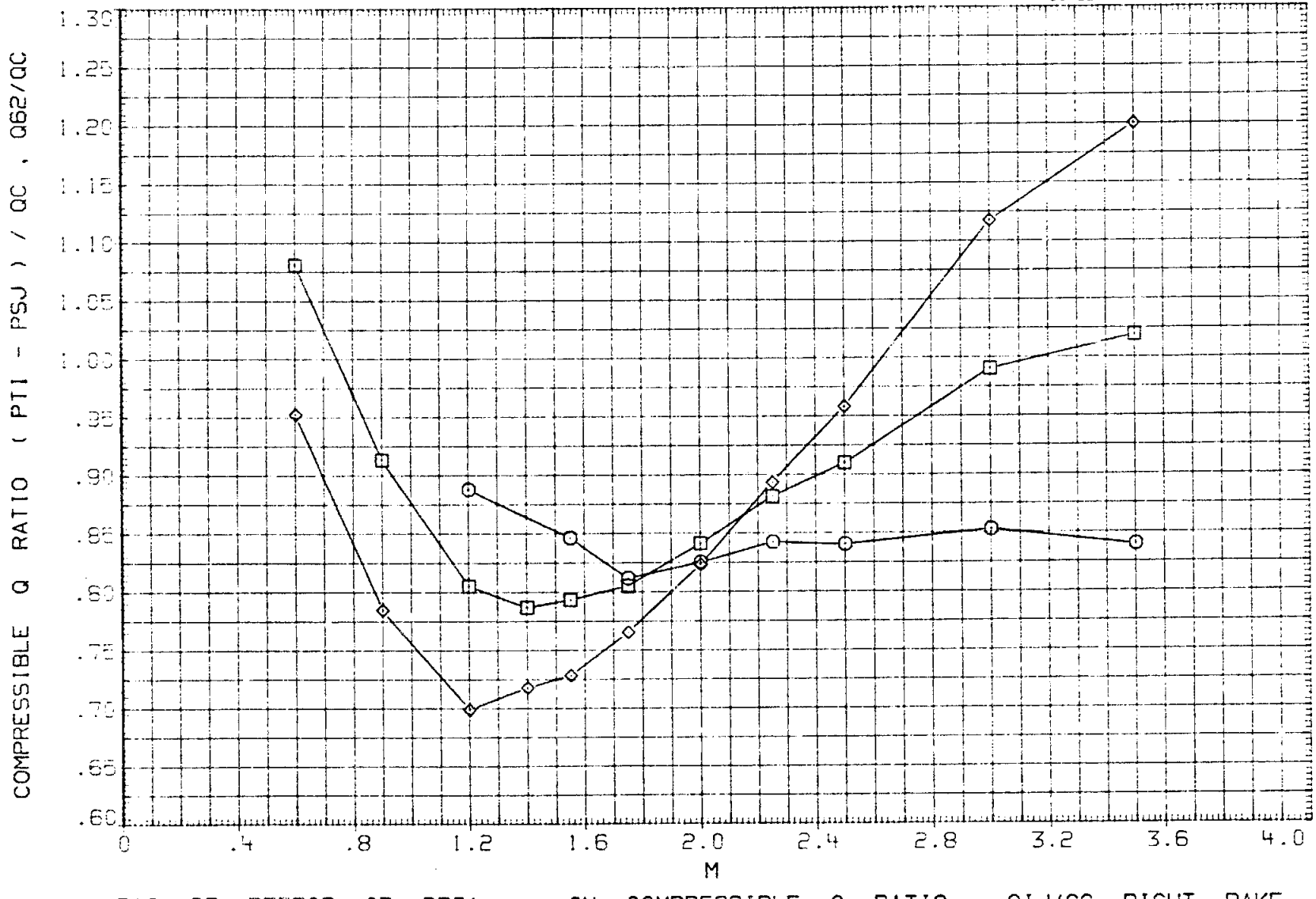


FIG. 23 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

(D)ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
FE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7807	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7801	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

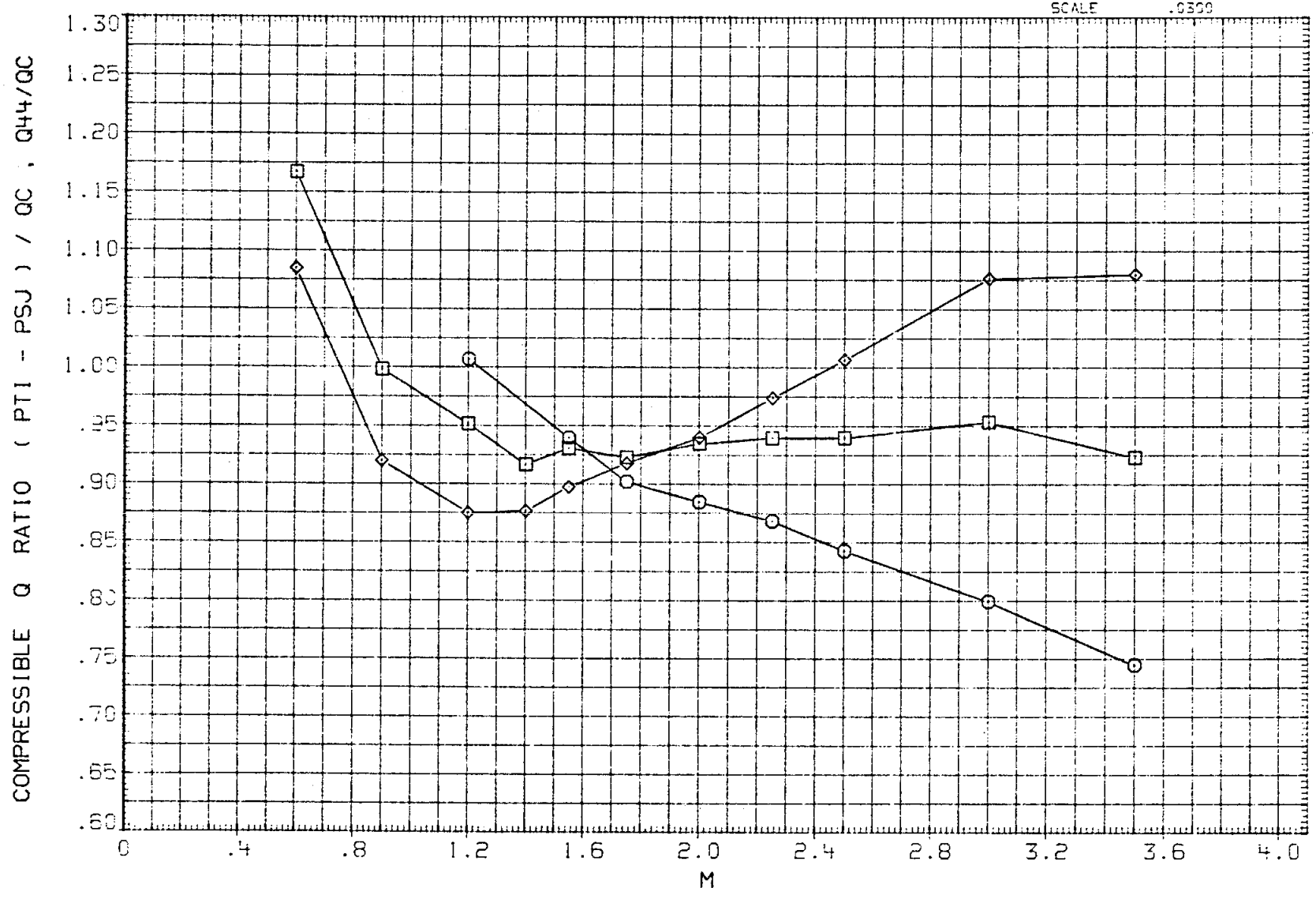


FIG. 23 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

(D) ALPHA = 18.00

DATA SET SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
PET803	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
PET805	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
PET807	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
PET801	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6600	IN.
XMRP	1076.6600	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

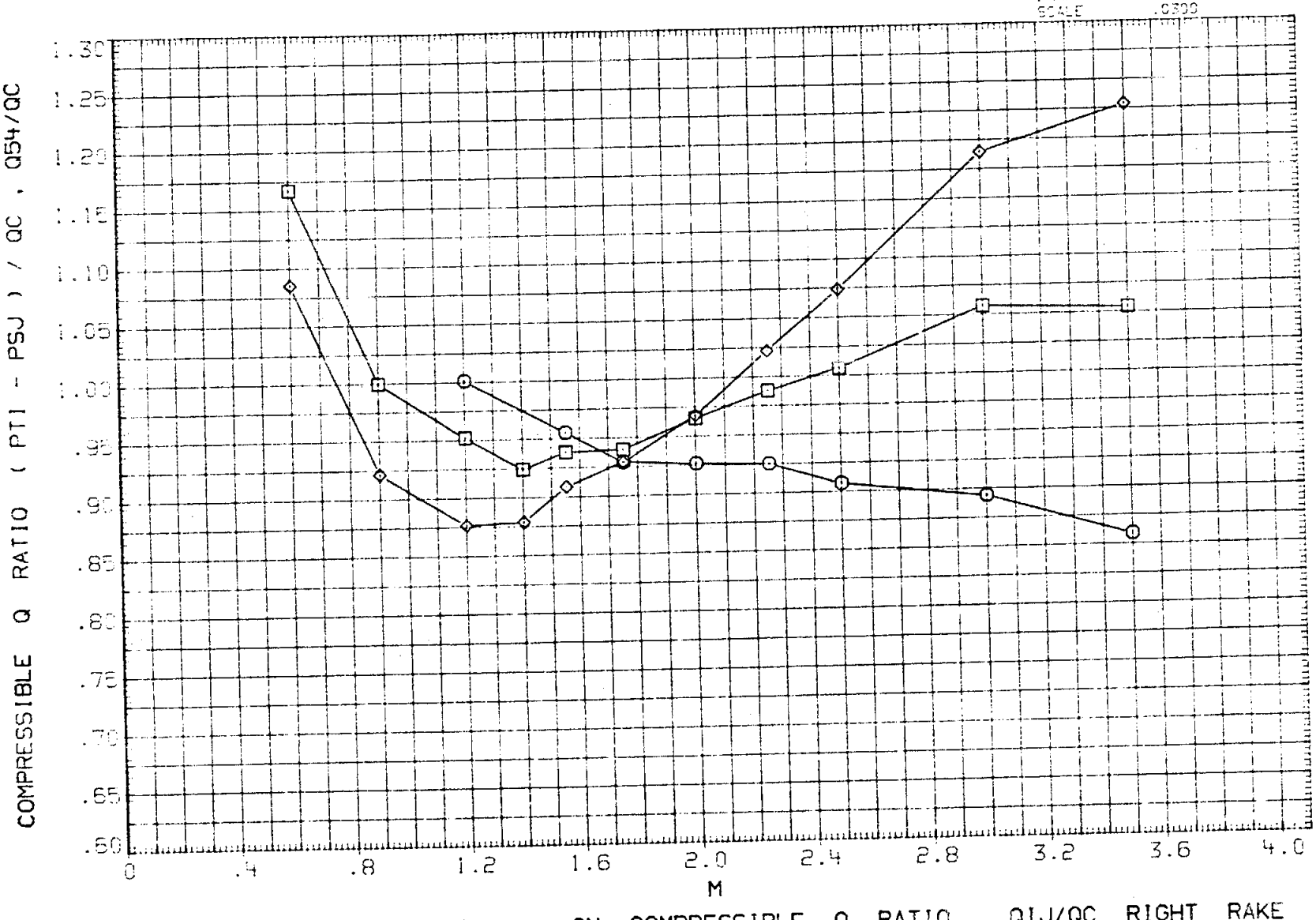


FIG. 23 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

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(D) ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
FE7B03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7B05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7B07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7B01	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

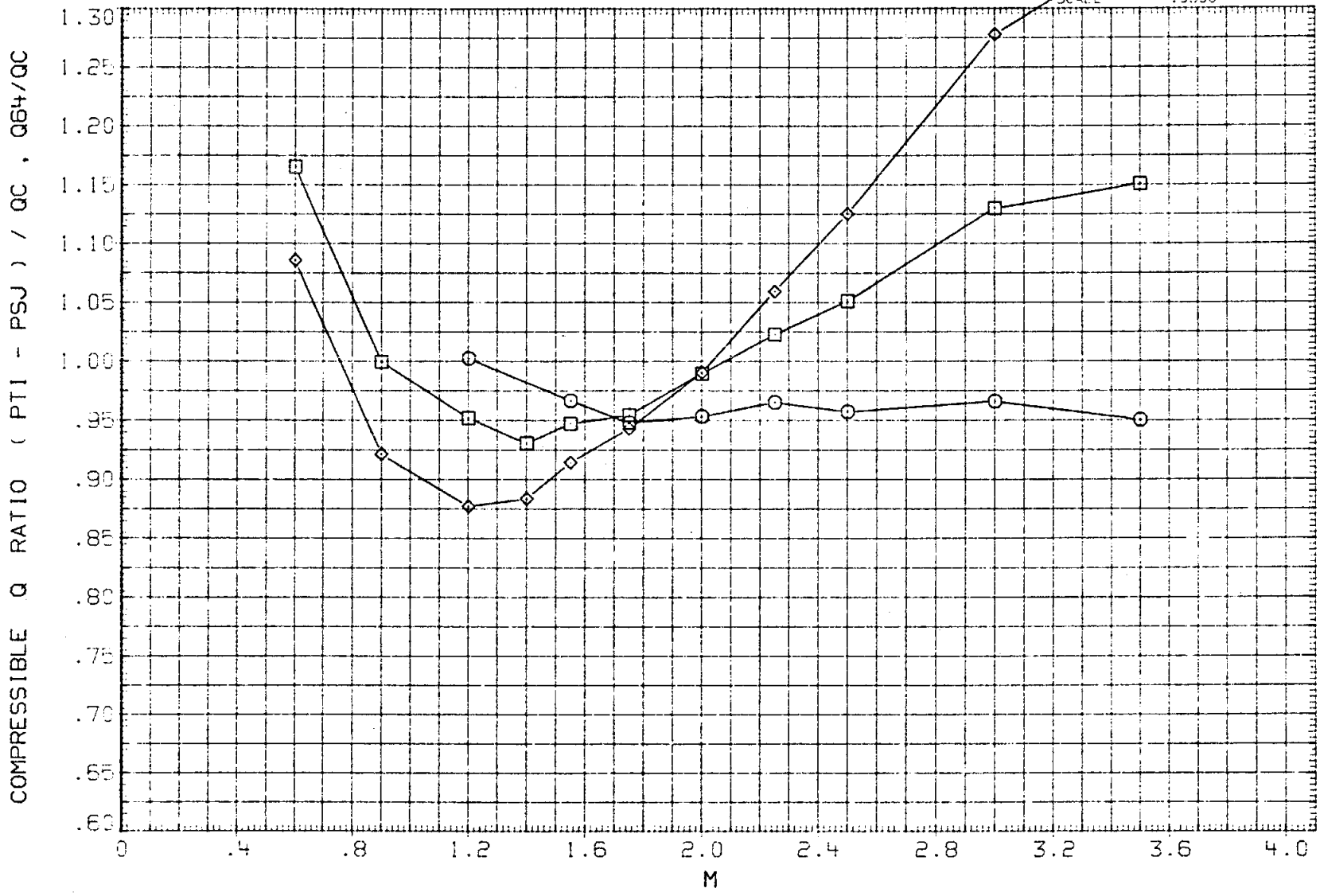


FIG. 23 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

(D) ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	SPLAP
FE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7807	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7801	△	ARC 11-97-87-094 OA161 ORBITER + WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2680.0000	SQ.FT.
LREF	474.8025	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

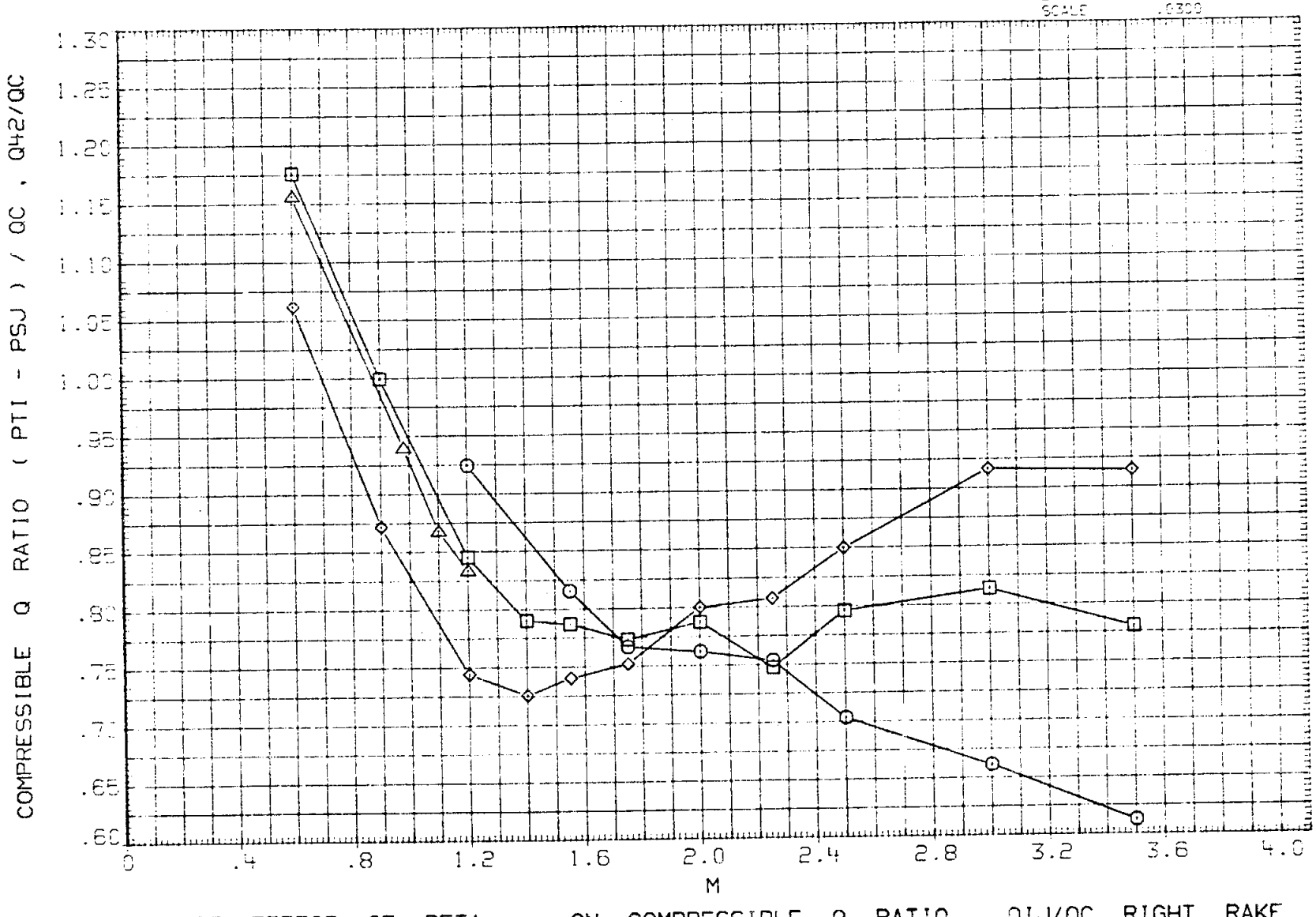


FIG. 23 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

(E)ALPHA = 24.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
FE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7807	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7801	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

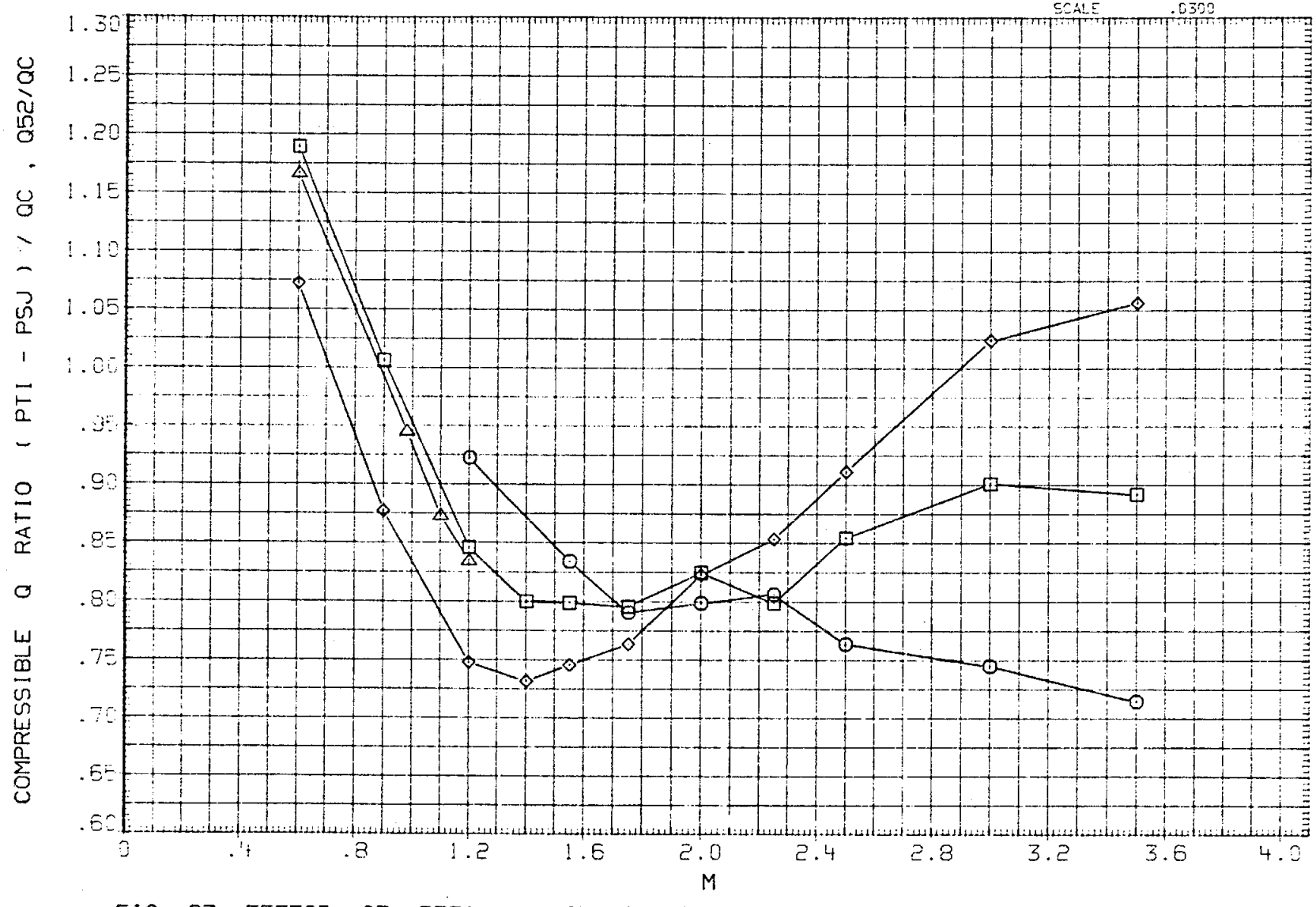


FIG. 23 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

(E)ALPHA = 24.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	RUDDER
FE7807		ARC 11-97-67-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7808		ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7809		ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7801		ARC 11-97-67-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XS
YMRP	.0000	IN. YS
ZMRP	375.0000	IN. ZS
SCALE	.0400	

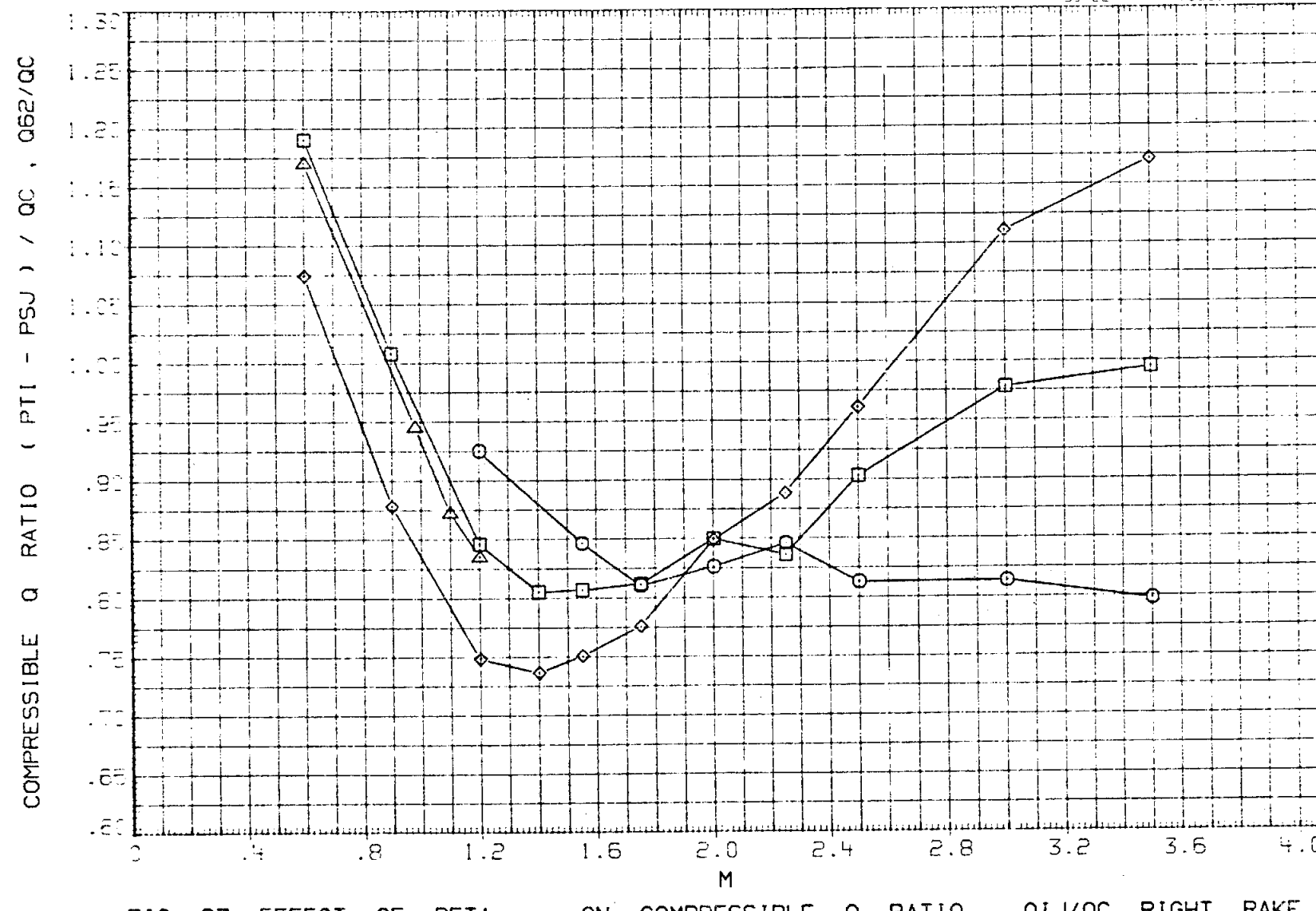


FIG. 23 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

(E)ALPHA = 24.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
FE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7807	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7801	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1075.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

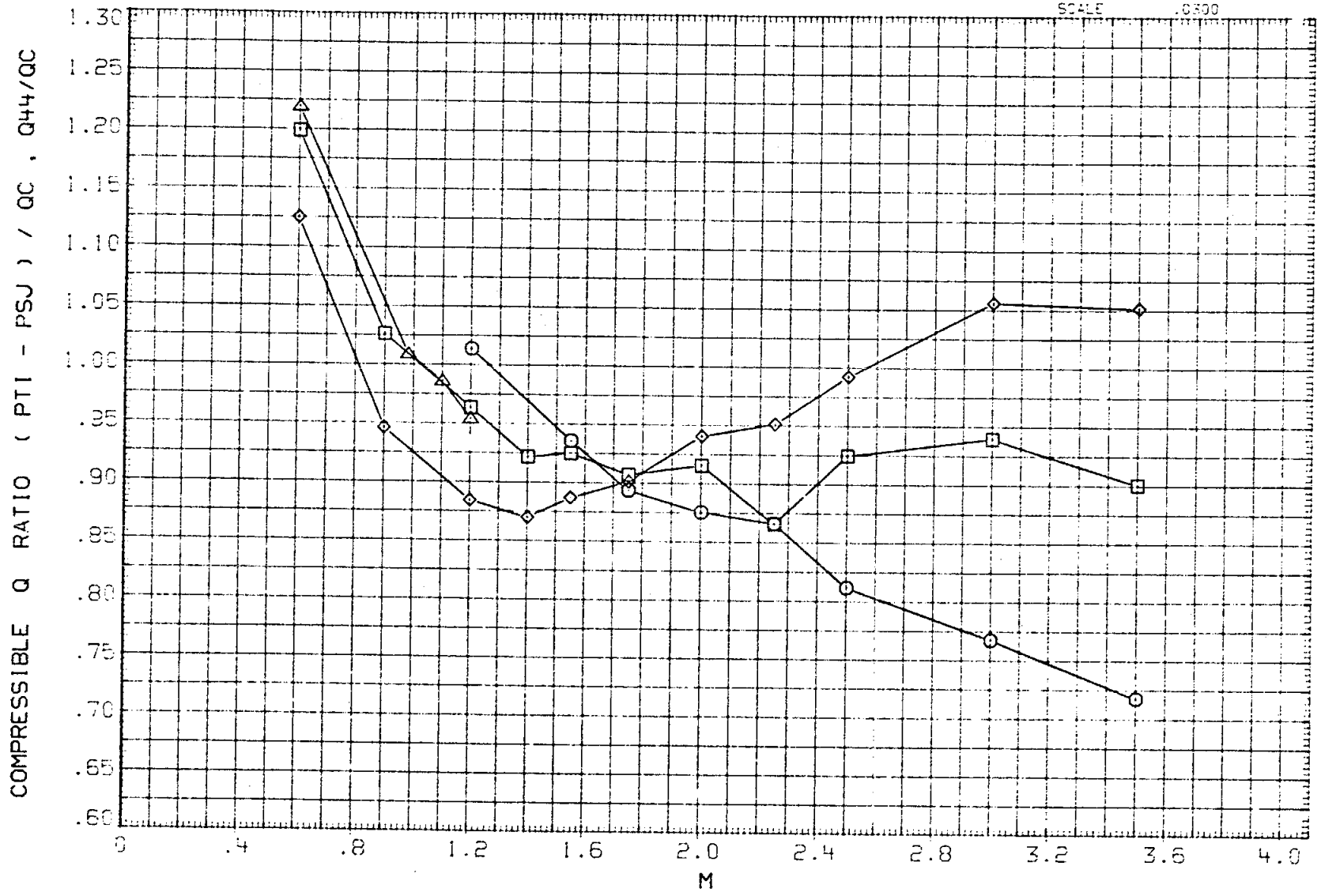


FIG. 23 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

(E)ALPHA = 24.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BUFLAP
FE7803	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7805	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7807	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7801	△	ARC 11-97-87-094 OA161 ORBITER + WING + RAKES	.000			7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6900	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0350	

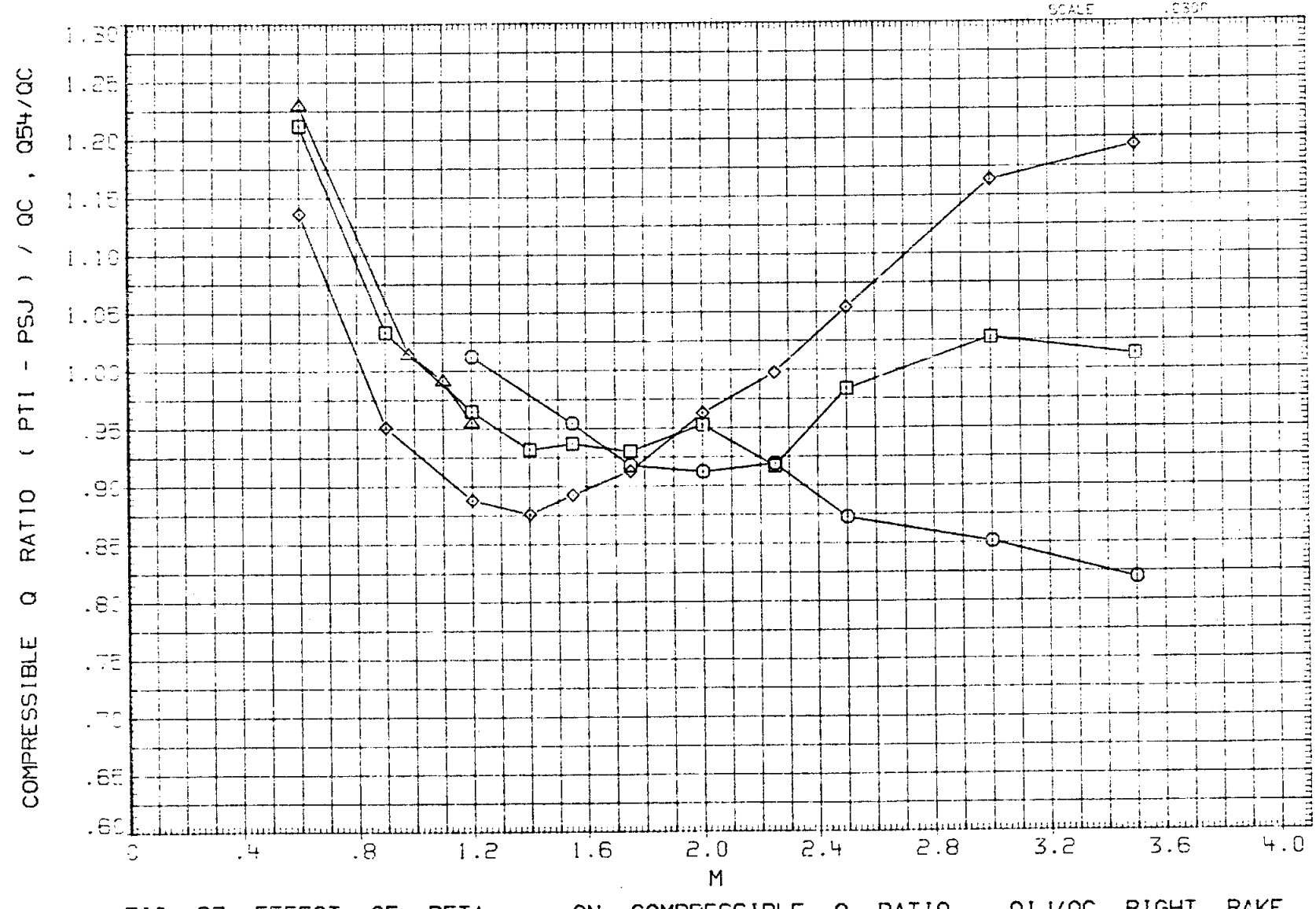


FIG. 23 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

(E)ALPHA = 24.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
FE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
FE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
FE7807	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
FE7801	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

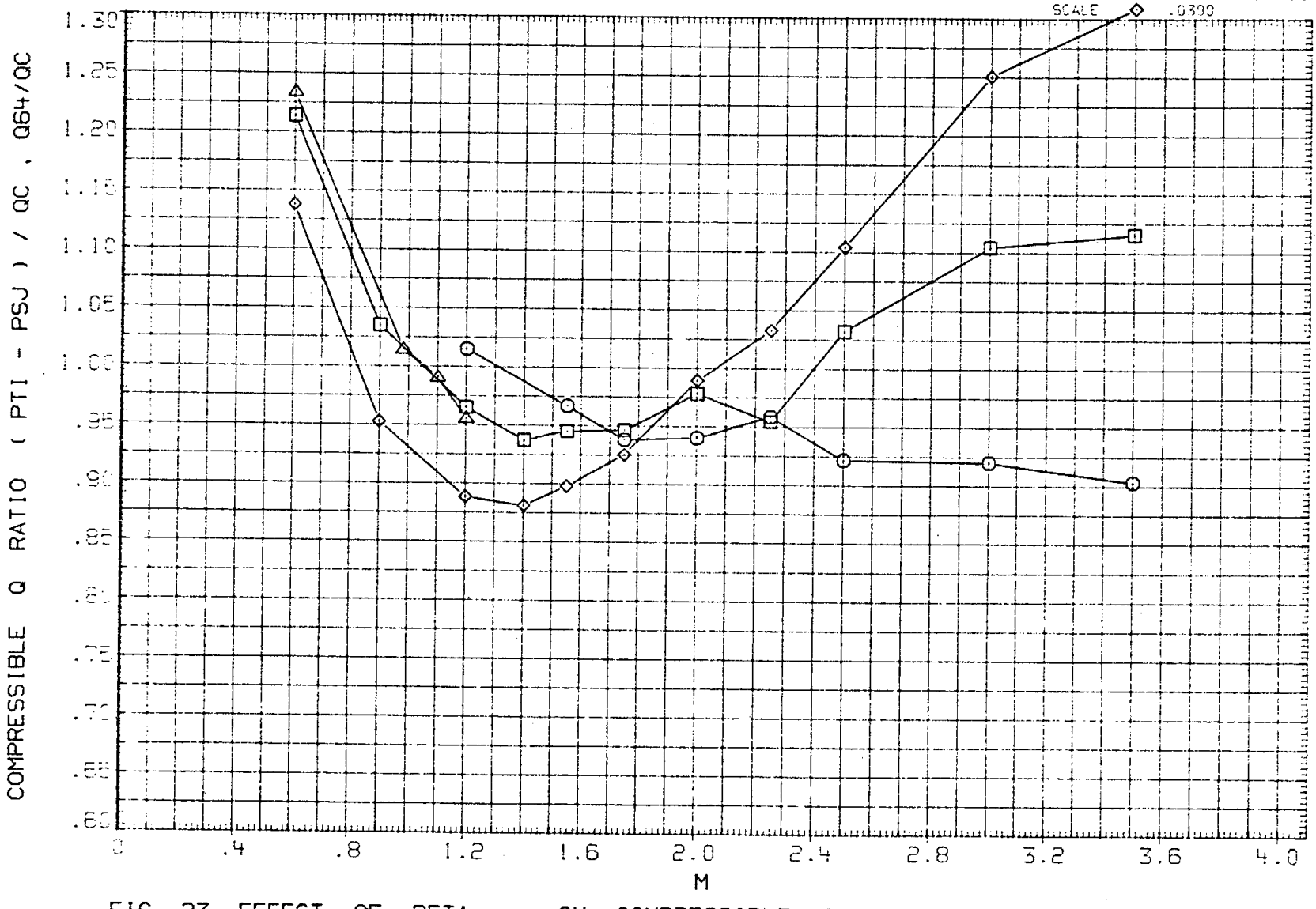


FIG. 23 EFFECT OF BETA ON COMPRESSIBLE Q RATIO QIJ/QC RIGHT RAKE

(E)ALPHA = 24.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
AE7803	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
AE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
AE7807	△	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
AE7081	○	ARC 11-97-87-094 OA161 ORBITER + WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

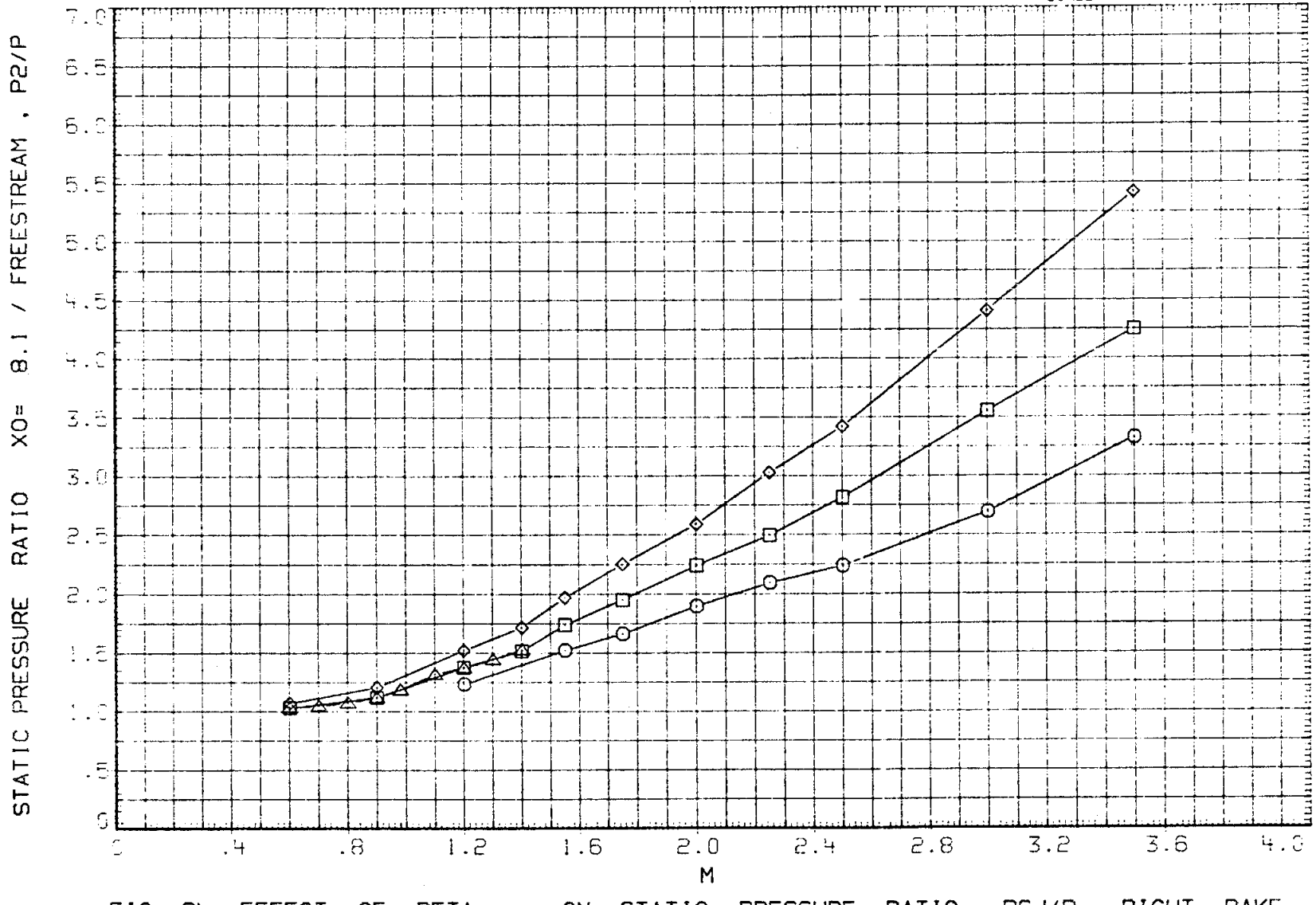


FIG. 24 EFFECT OF BETA ON STATIC PRESSURE RATIO PSJ/P RIGHT RAKE

(A)ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
AE7803	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
AE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
AE7807	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
AE7801	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

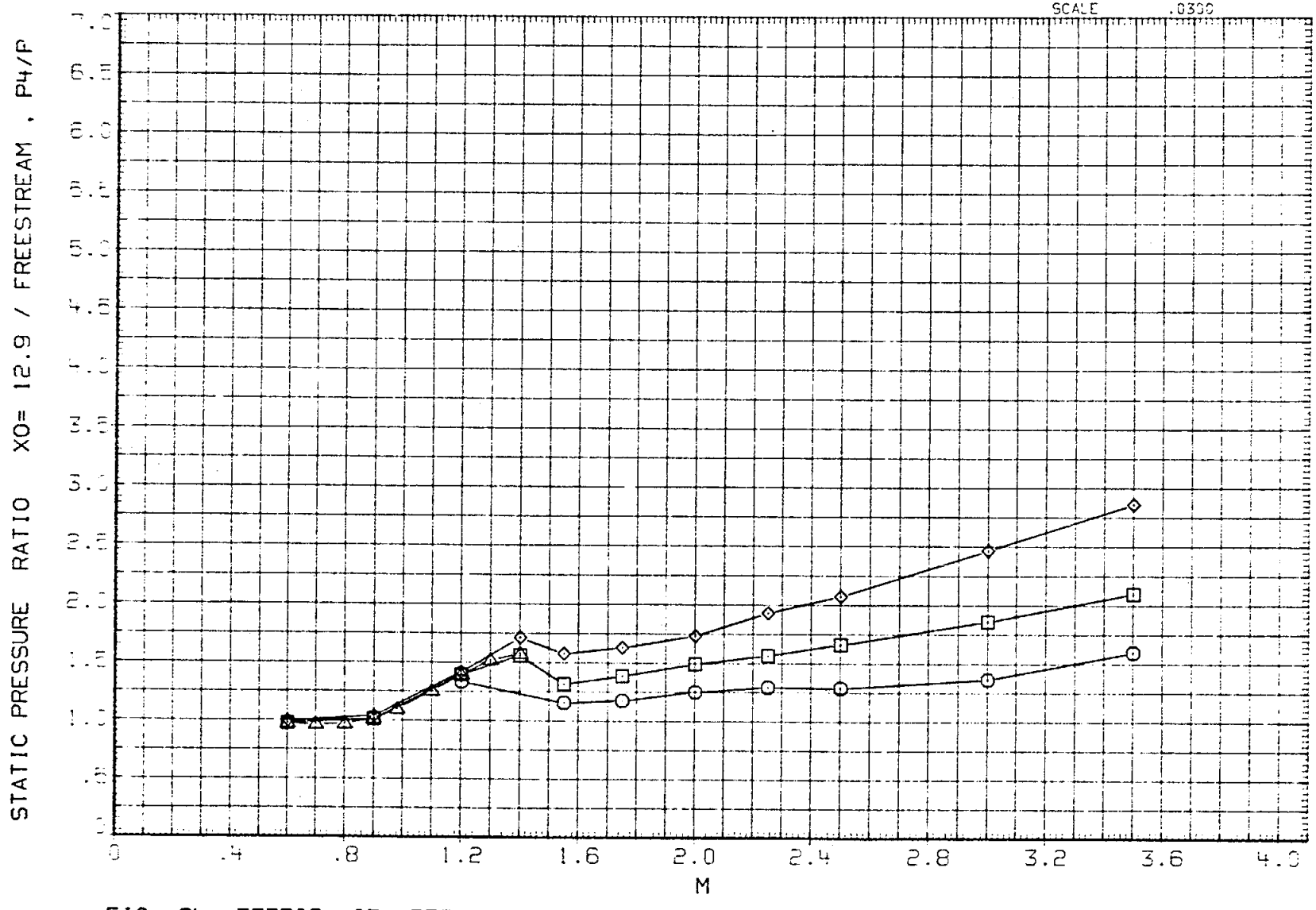


FIG. 24 EFFECT OF BETA ON STATIC PRESSURE RATIO PSJ/P RIGHT RAKE

(A) ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
AE7B03	◇ (BLUE)	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
AE7B05	□ (BLUE)	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
AE7B07	○ (BLUE)	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
AE7B01	△ (BLUE)	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION		
SREF	1400.0000	SQ.FT.
LREF	474.6000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

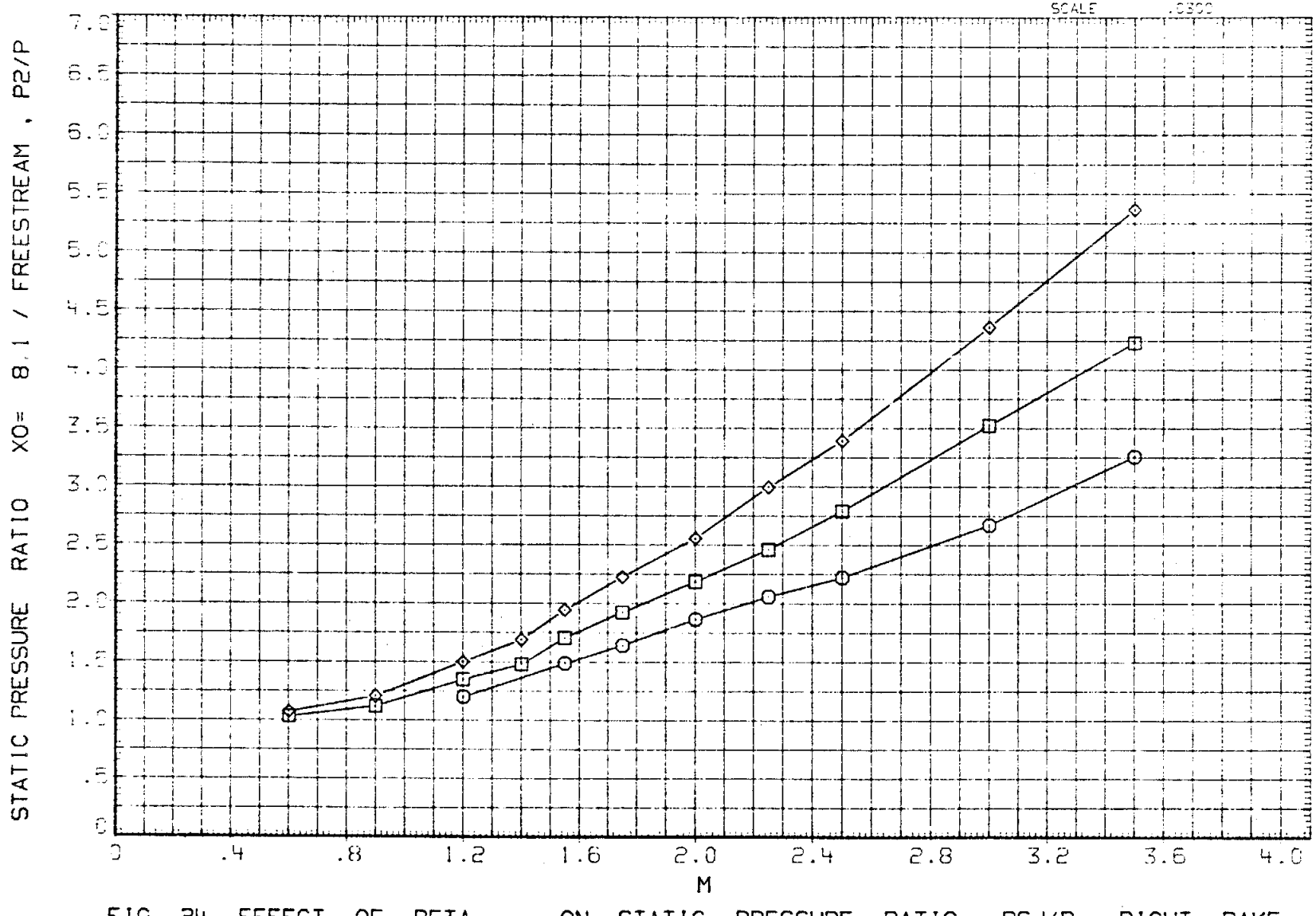


FIG. 24 EFFECT OF BETA ON STATIC PRESSURE RATIO PSJ/P RIGHT RAKE

(B)ALPHA = 6.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
AET803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
AET805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
AET804	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
AET801	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	935.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

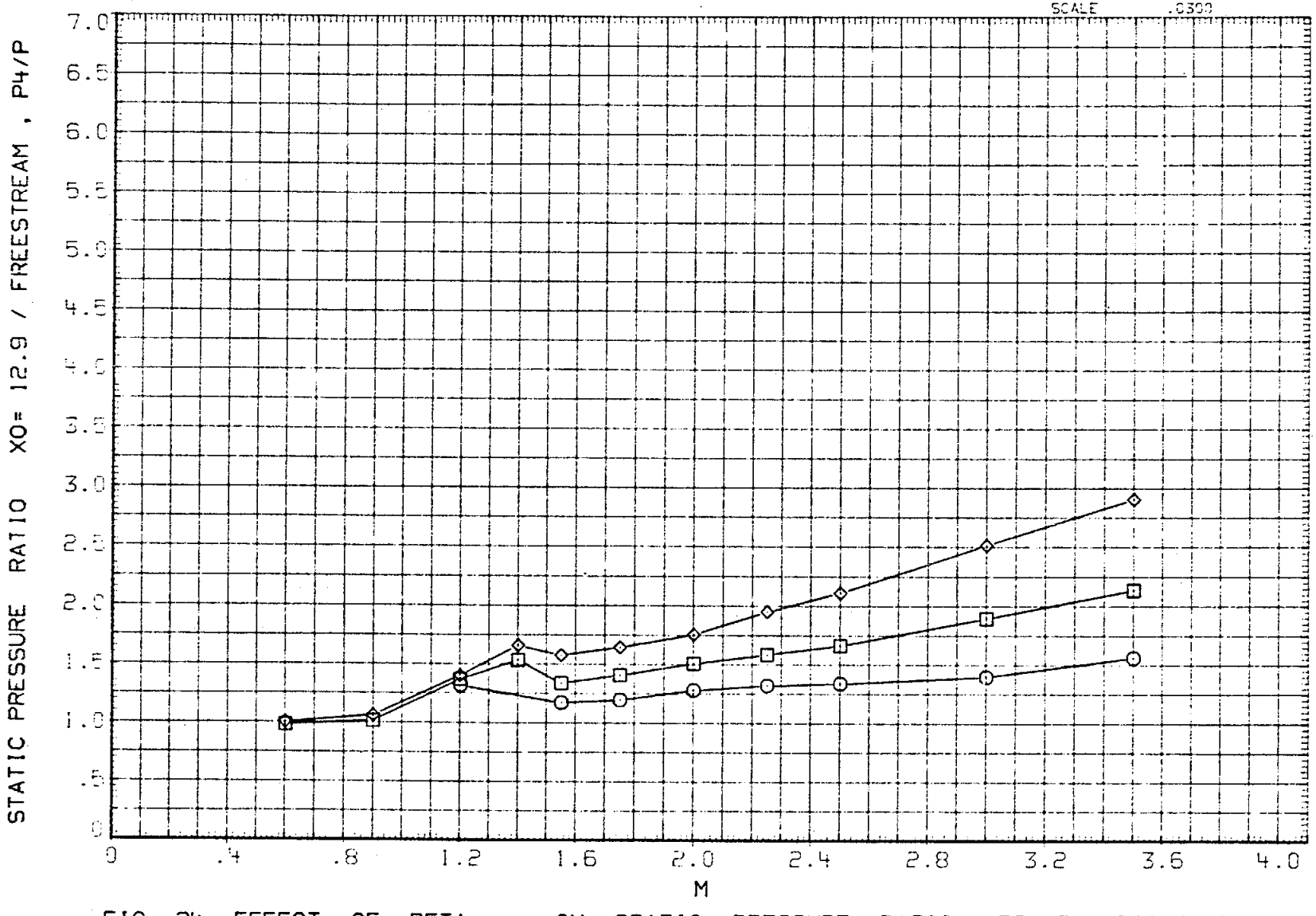


FIG. 24 EFFECT OF BETA ON STATIC PRESSURE RATIO PSJ/P RIGHT RAKE

(B) ALPHA = 6.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
AE7803	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
AE7806	▯	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
AE7807	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
AE7801	△	ARC 11-97-87-094 OA161 ORBITER + WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.6000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

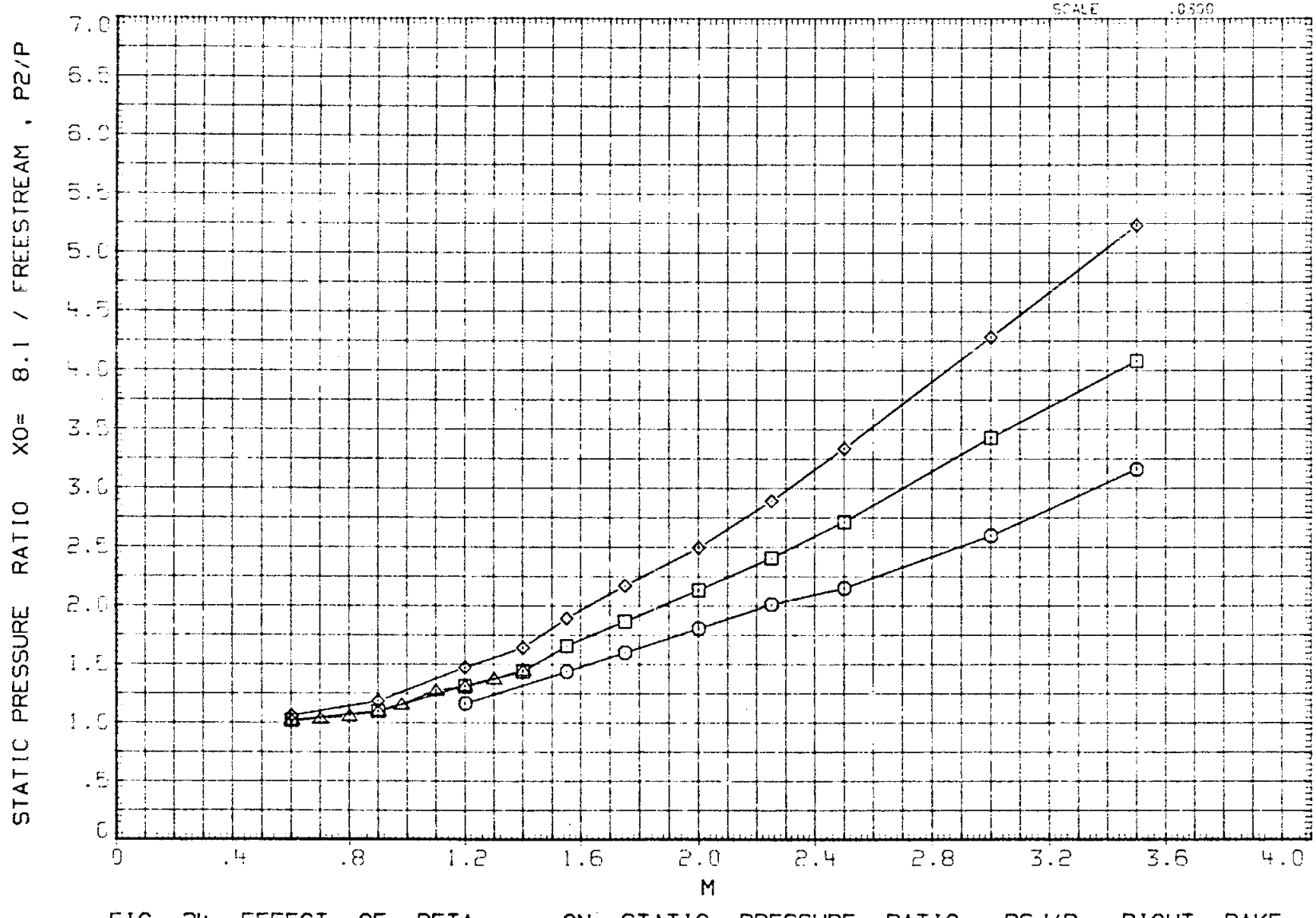


FIG. 24 EFFECT OF BETA ON STATIC PRESSURE RATIO PSJ/P RIGHT RAKE

(C)ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
AE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
AE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
AE7807	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
AE7801	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

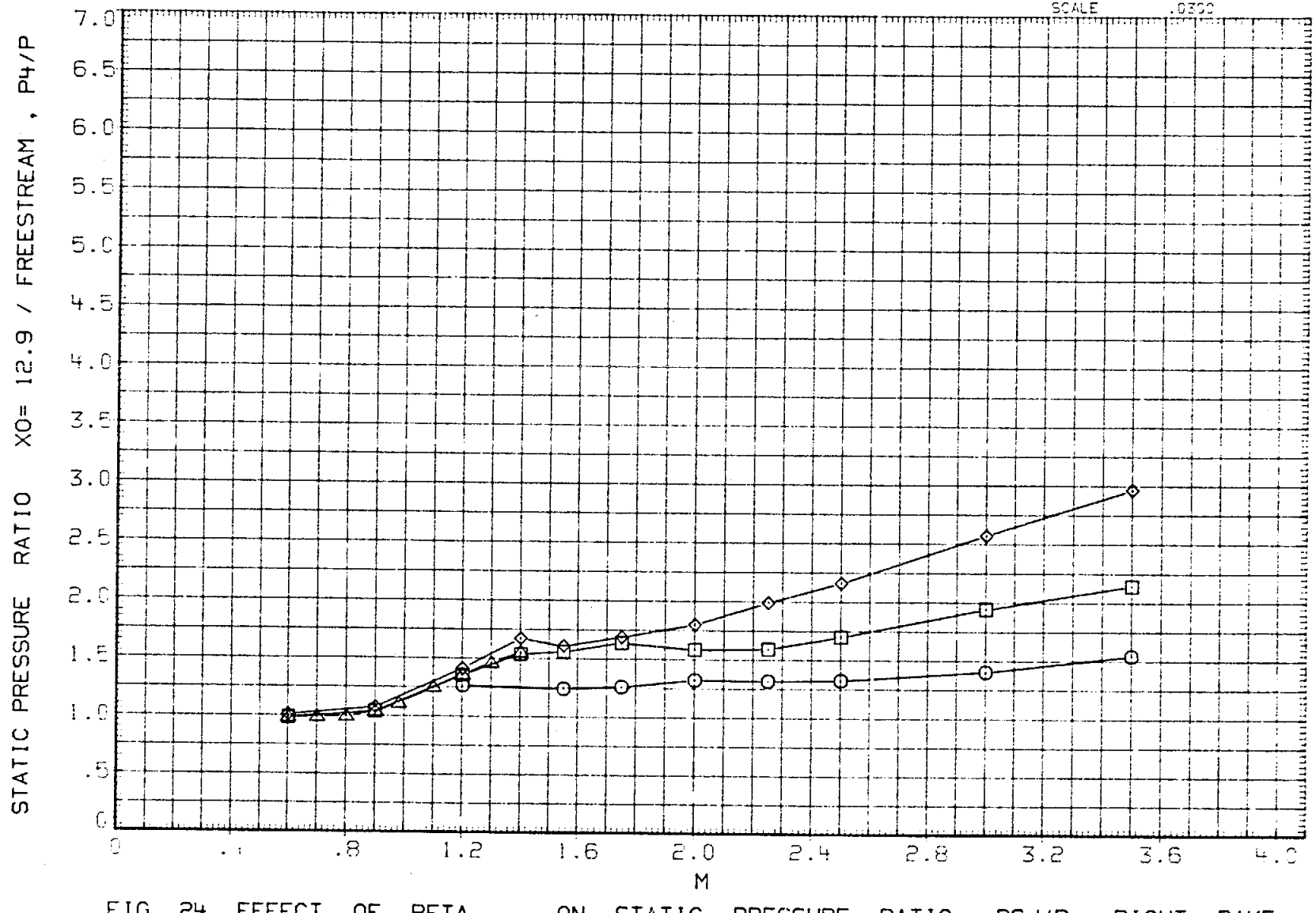


FIG. 24 EFFECT OF BETA ON STATIC PRESSURE RATIO PSJ/P RIGHT RAKE

(C)ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILERON	BODY FLAP
AE7803	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
AE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
AE7807	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
AE7801	△	DATA NOT AVAILABLE	.000			7.170

REFERENCE INFORMATION

SREF	9690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.8800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

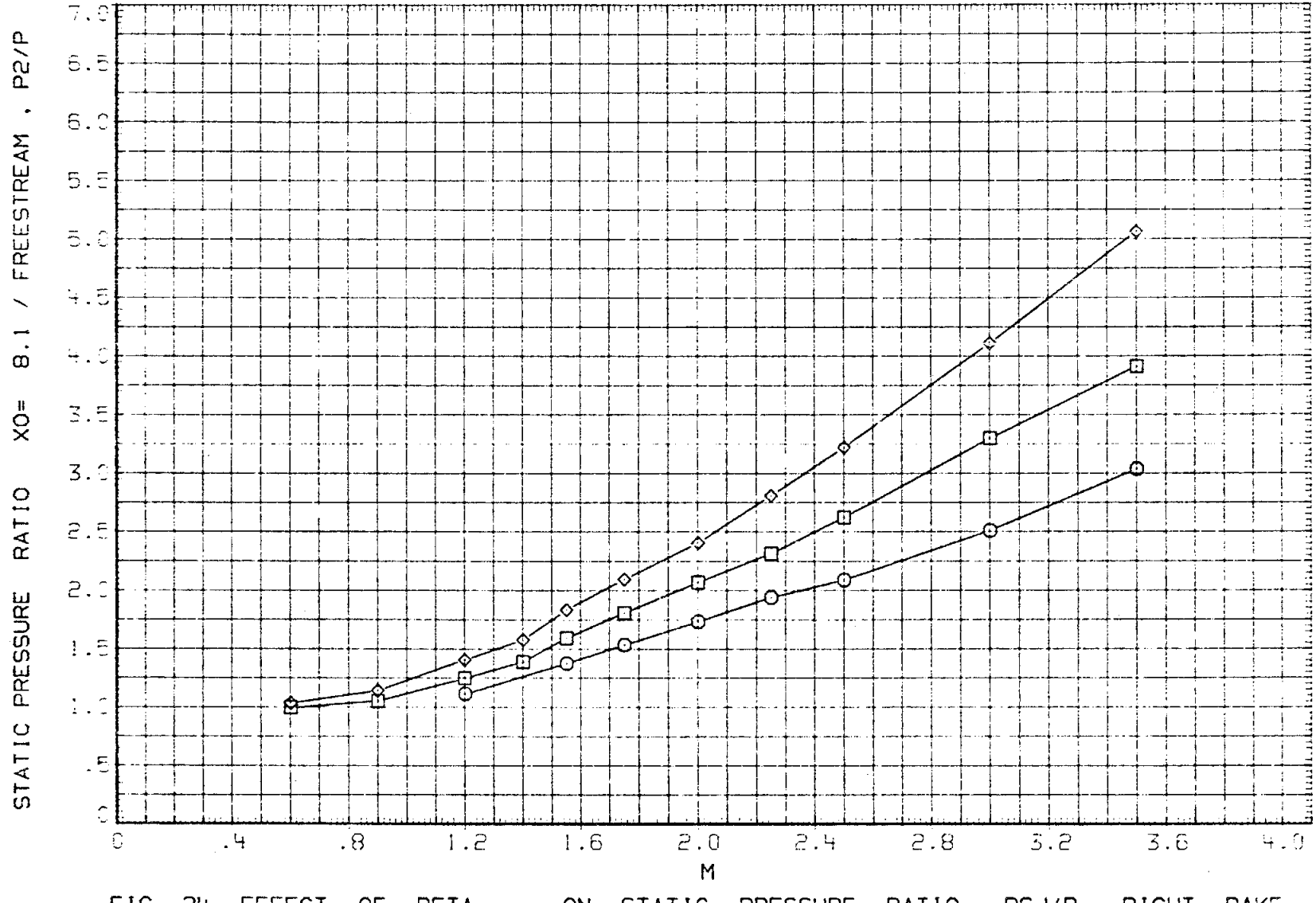


FIG. 24 EFFECT OF BETA ON STATIC PRESSURE RATIO PSJ/P RIGHT RAKE

(D)ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
AE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
AE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
AE7807	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
AE7801	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

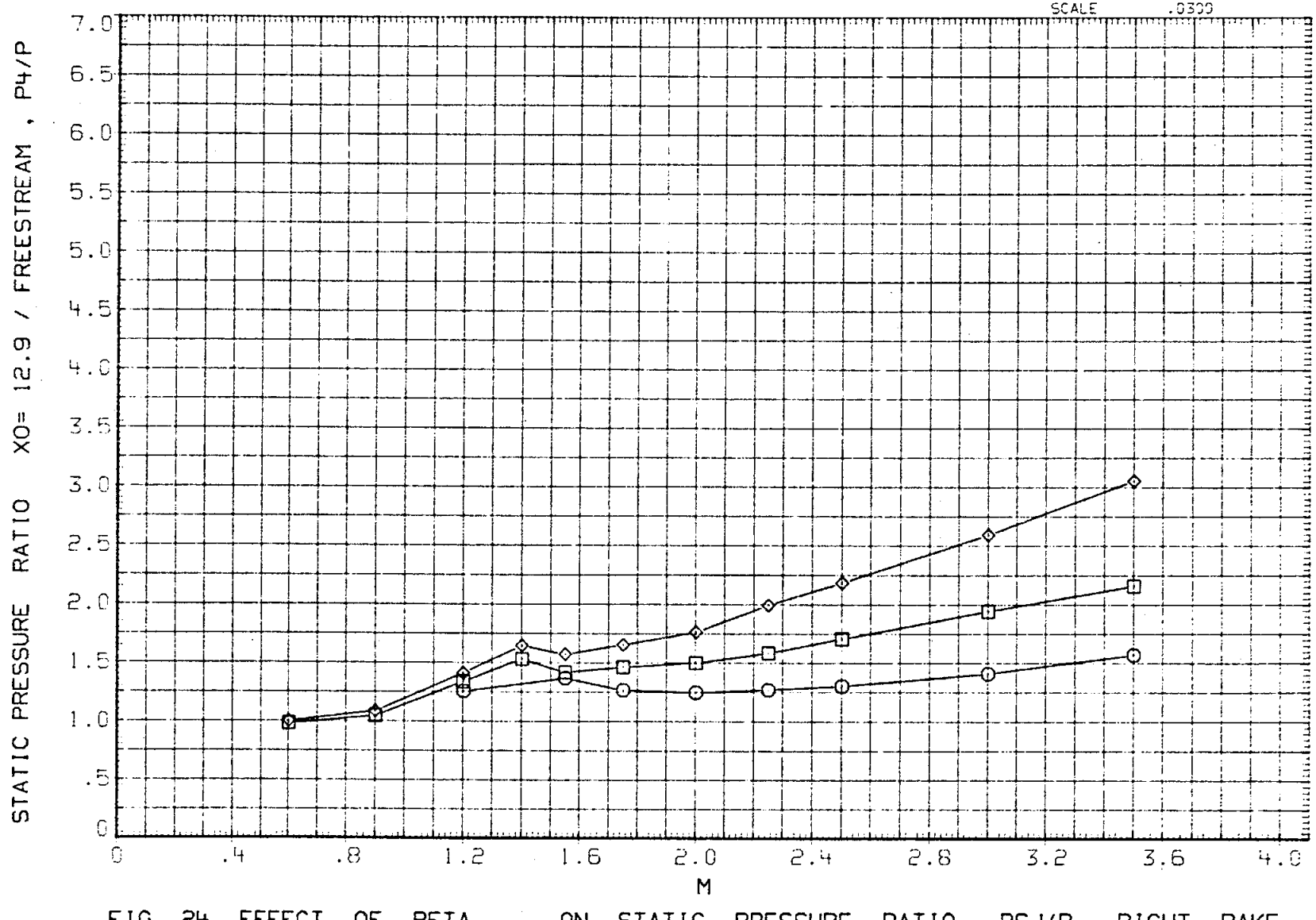


FIG. 24 EFFECT OF BETA ON STATIC PRESSURE RATIO PSJ/P RIGHT RAKE

(D)ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
AE7B02	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
AE7B05	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
AE7B07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
AE7B01	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0500	

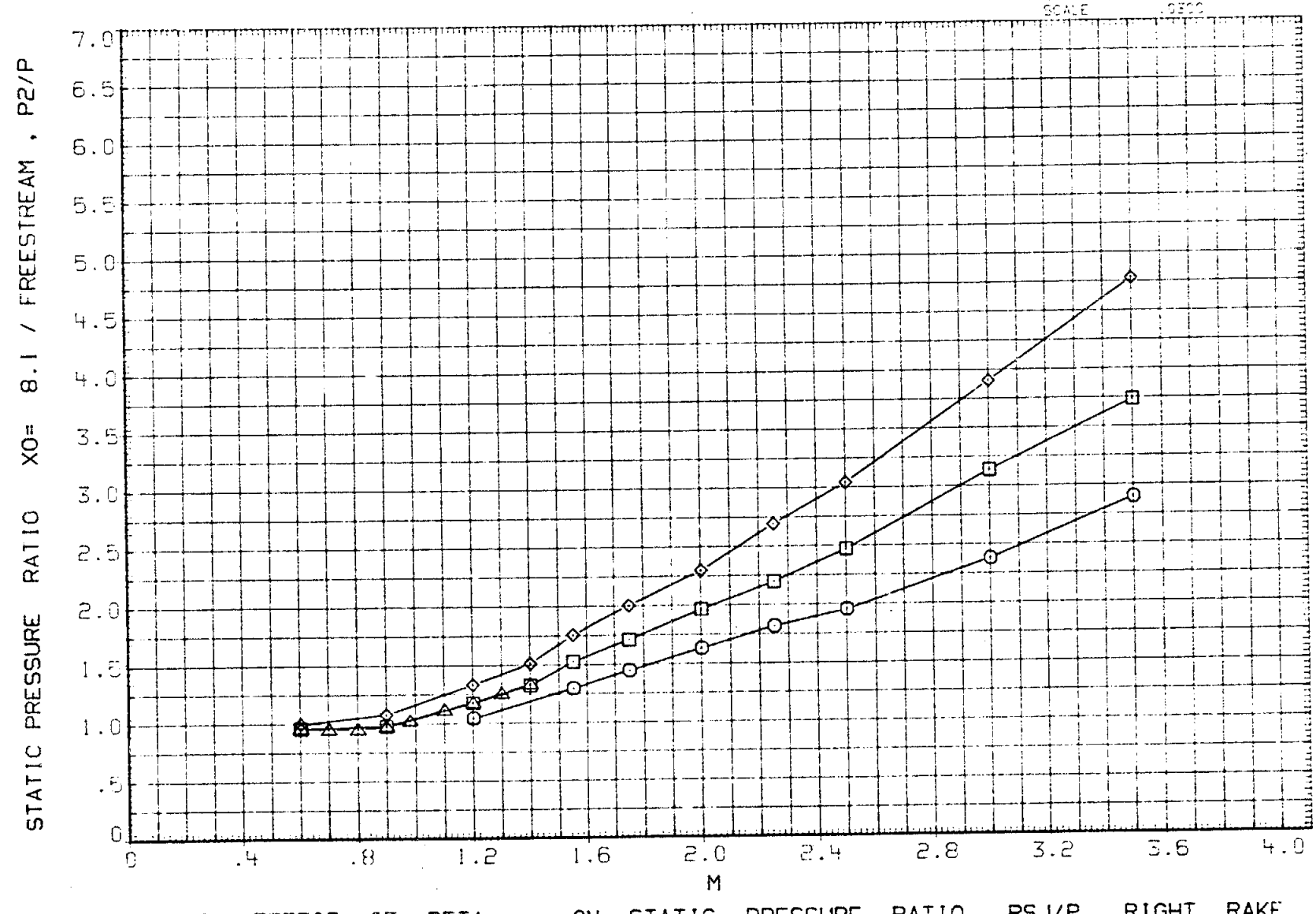


FIG. 24 EFFECT OF BETA ON STATIC PRESSURE RATIO PSJ/P RIGHT RAKE

(E) ALPHA = 24.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
AE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
AE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
AE7807	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
AE7801	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

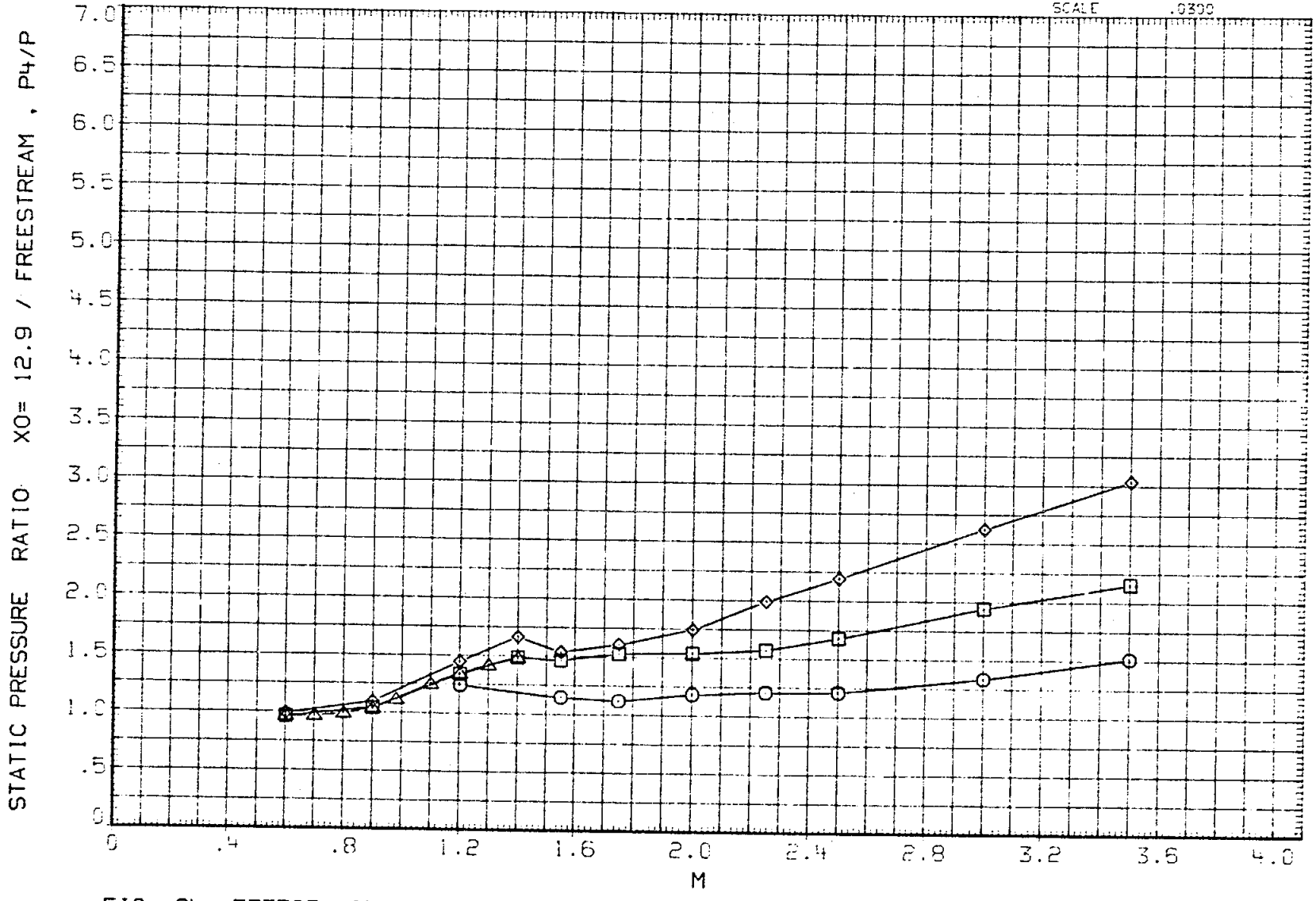


FIG. 24 EFFECT OF BETA ON STATIC PRESSURE RATIO PSJ/P RIGHT RAKE

(E)ALPHA = 24.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	DOF
BE7B02	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	+5.000	.000	.000	-7.170
BE7B05	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
BE7B07	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
RF7B01	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.6000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

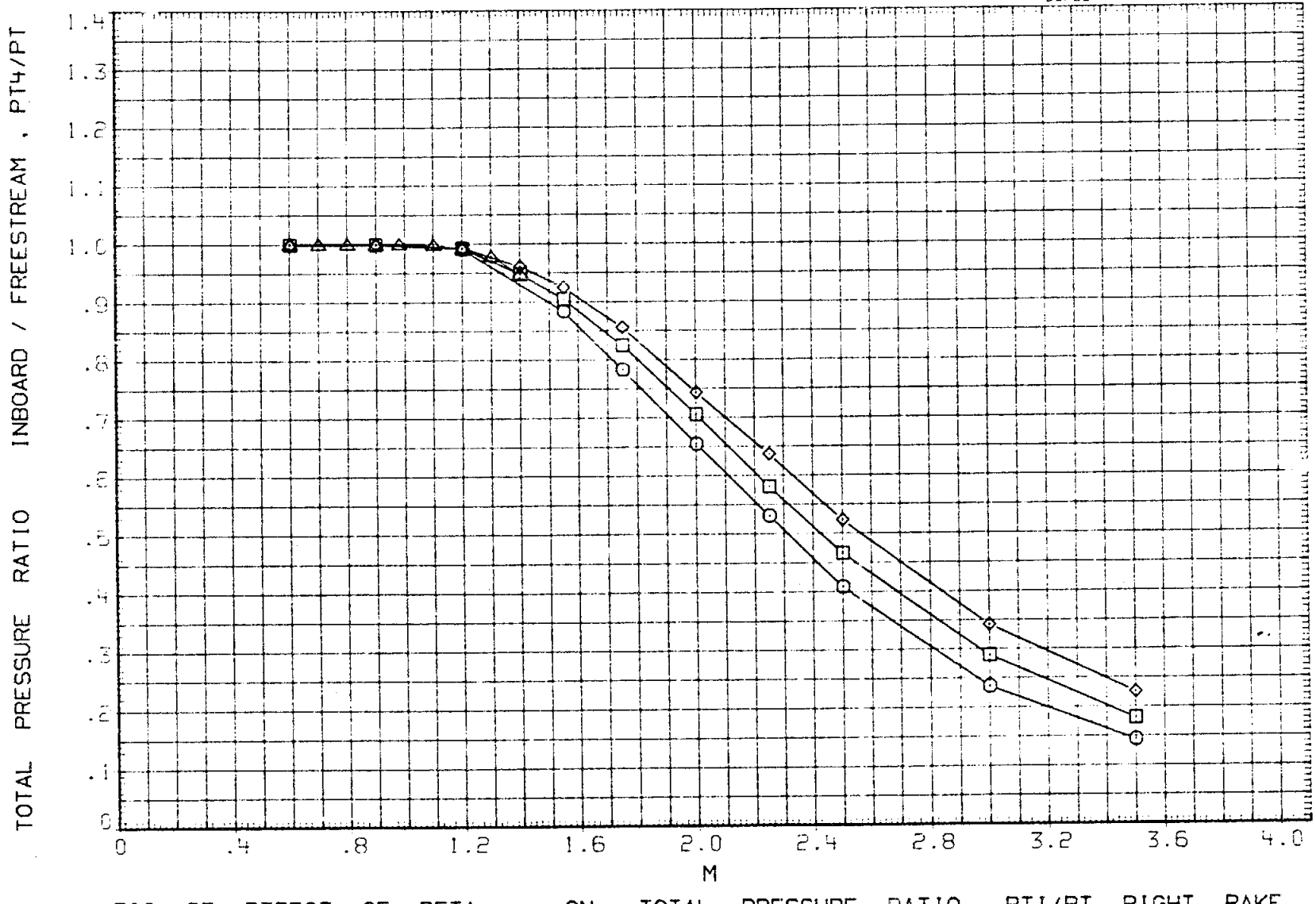


FIG. 25 EFFECT OF BETA ON TOTAL PRESSURE RATIO PTI/PT RIGHT RAKE

(A)ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
BE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
BE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
BE7807	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
BE7801	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

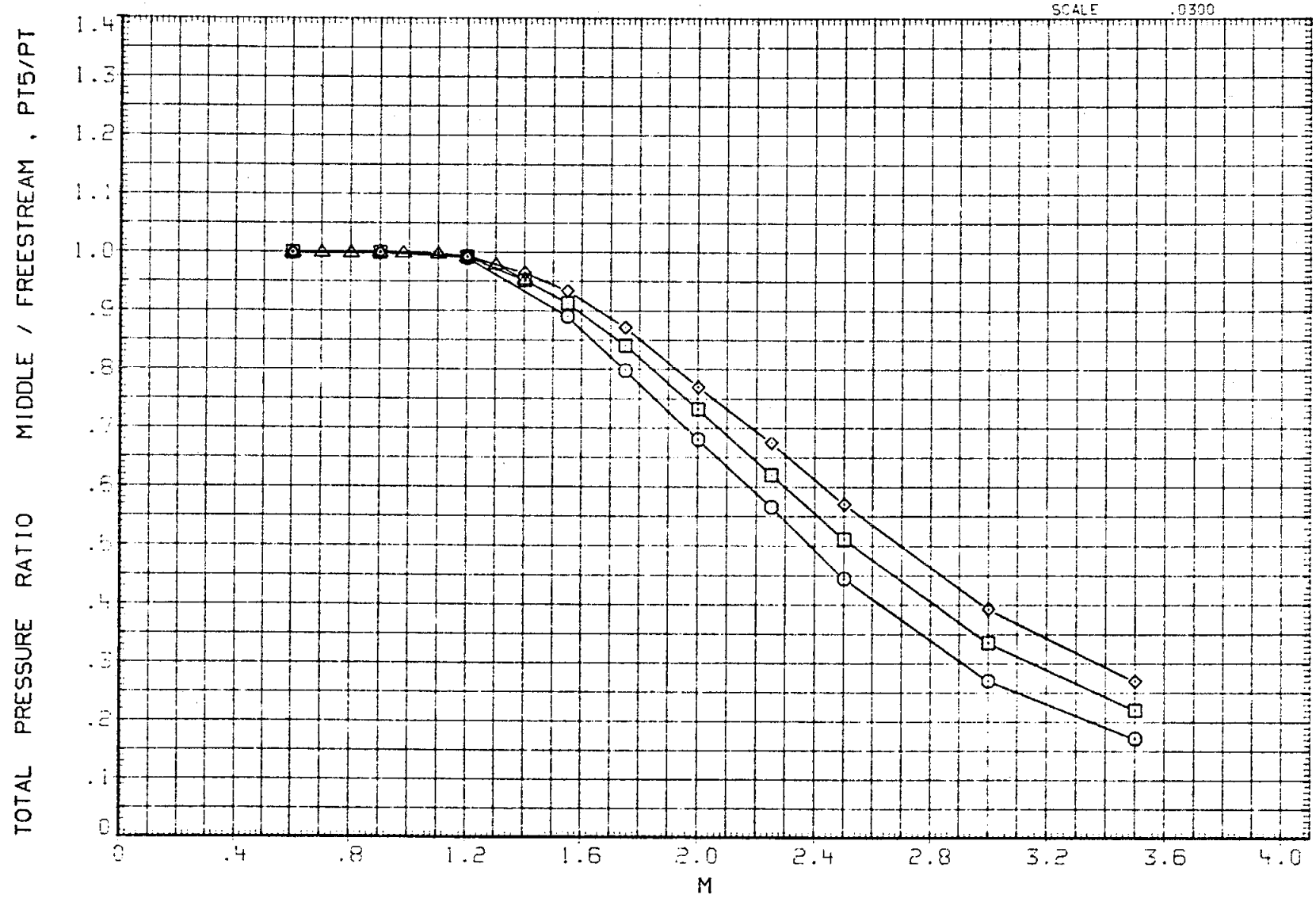


FIG. 25 EFFECT OF BETA ON TOTAL PRESSURE RATIO PTI/PT RIGHT RAKE

(A) ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
BE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
BE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
BE7807	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
BE7801	△	ARC 11-97-87-094 OA161 ORBITER + WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

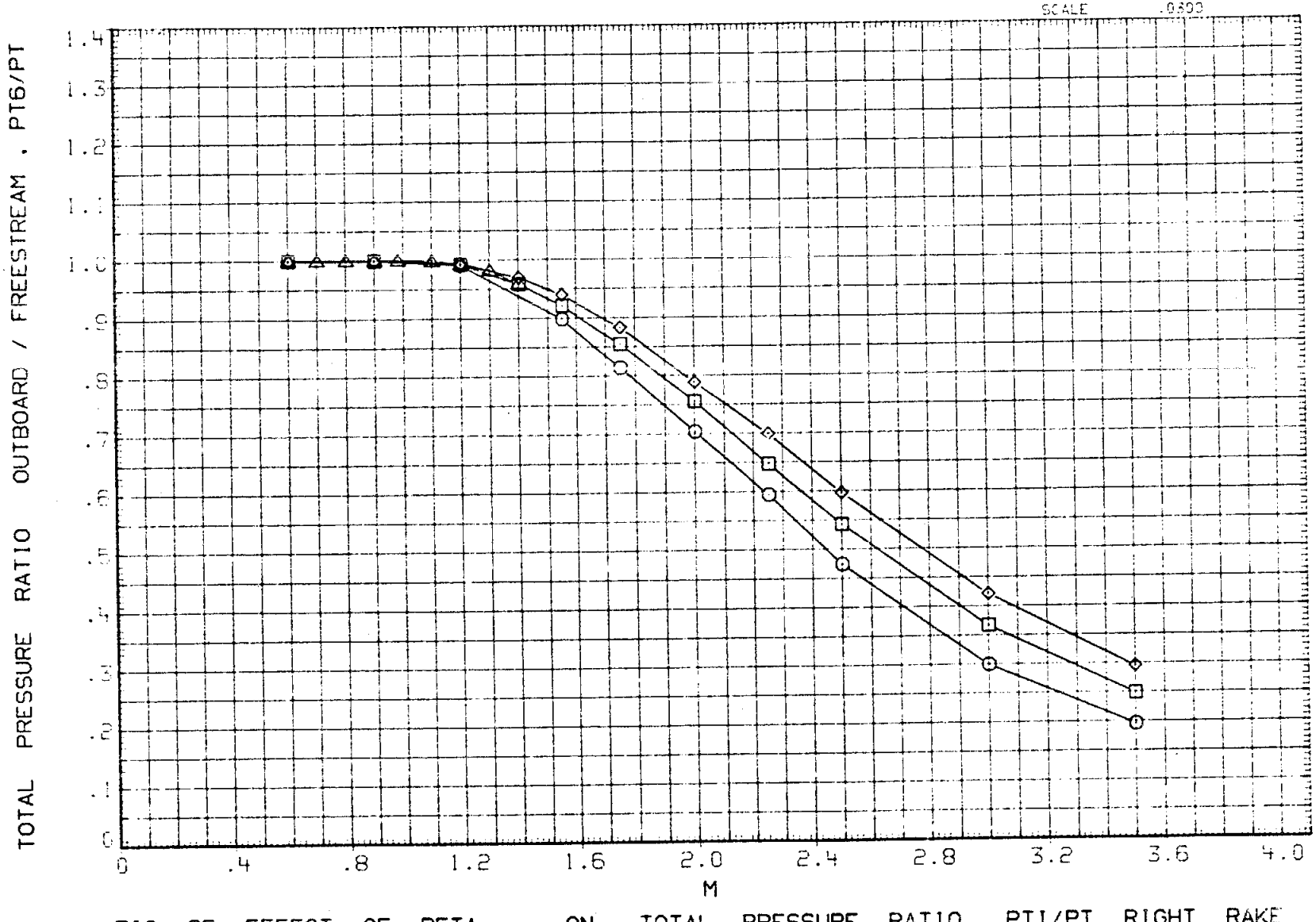


FIG. 25 EFFECT OF BETA ON TOTAL PRESSURE RATIO PTI/PT RIGHT RAKE

(A)ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
BE7B03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
BE7B05	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
BE7B07	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
BE7B01	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

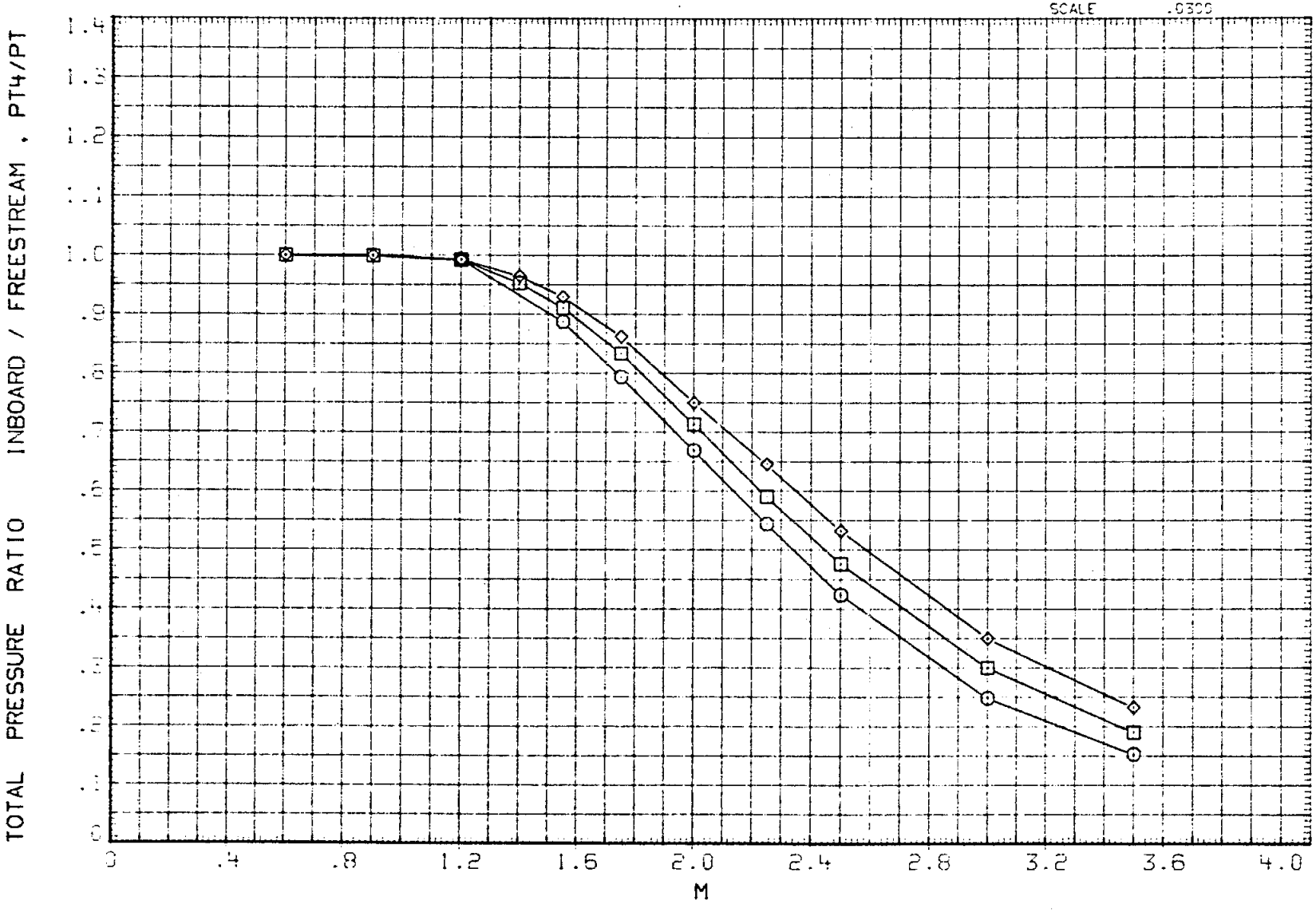


FIG. 25 EFFECT OF BETA ON TOTAL PRESSURE RATIO PTI/PT RIGHT RAKE

(B:ALPHA = 6.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BOFLAP
BE7B03	○	ARC II-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
BE7B02	□	ARC II-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
BE7B01	◇	ARC II-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
BE7B01	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION		
SREF	2680.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.3800	

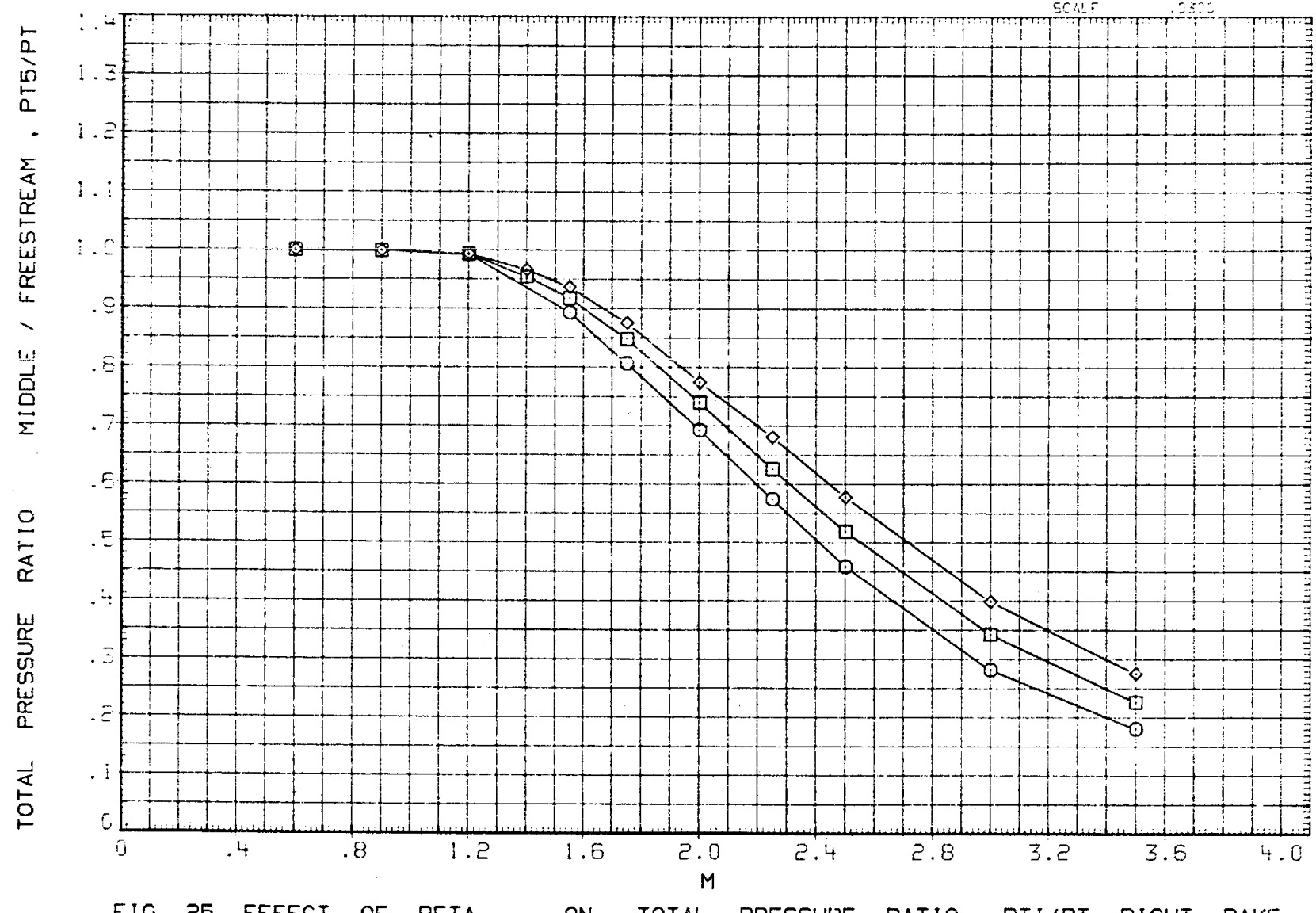


FIG. 25 EFFECT OF BETA ON TOTAL PRESSURE RATIO PTI/PT RIGHT RAKE

(B)ALPHA = 6.00

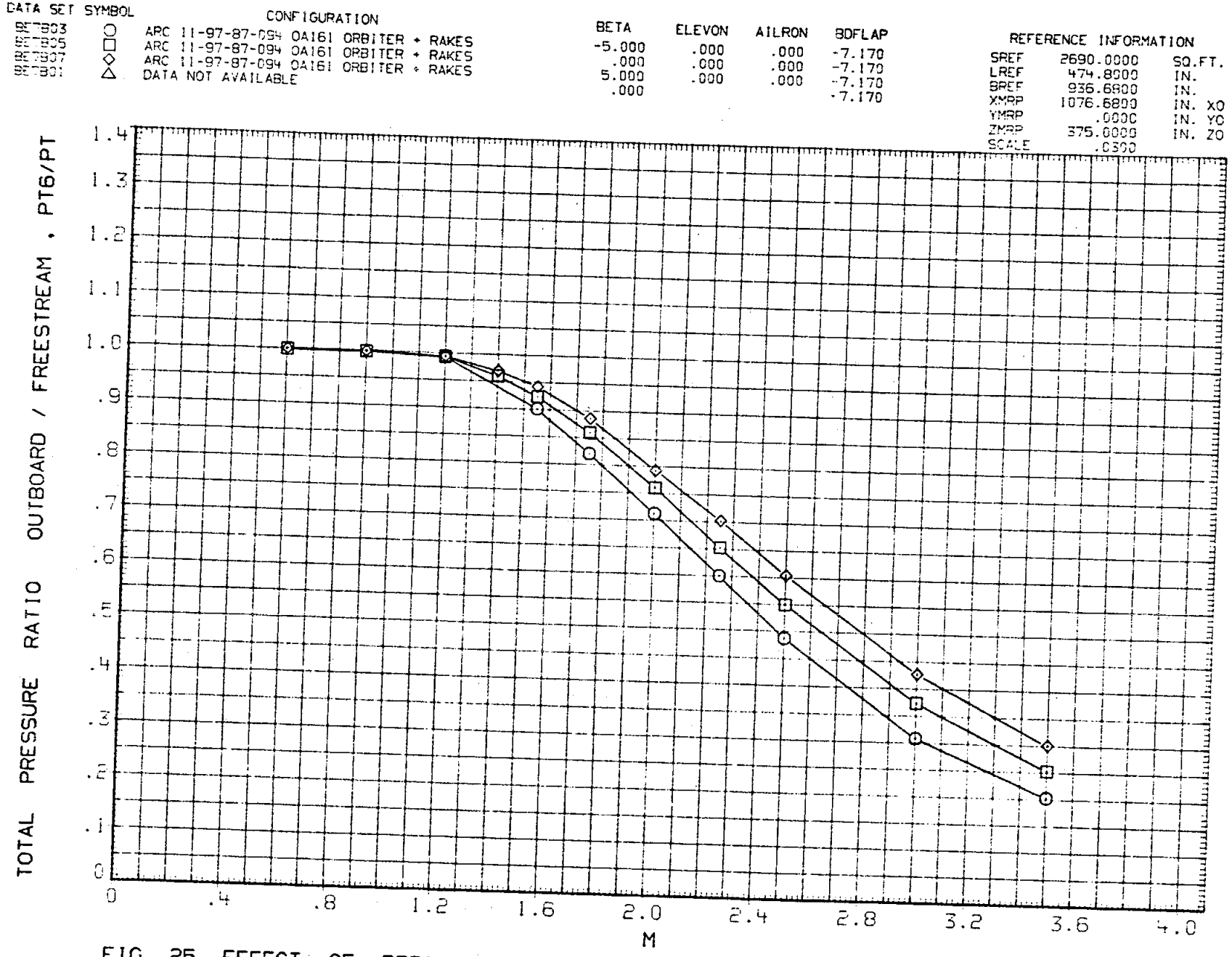


FIG. 25 EFFECT OF BETA ON TOTAL PRESSURE RATIO PTI/PT RIGHT RAKE

(B) ALPHA = 6.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAT
BE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
BE7805	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
BE7807	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
BE7801	△	ARC 11-97-87-094 OA161 ORBITER + WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.0800	IN.
XMRP	1076.8000	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

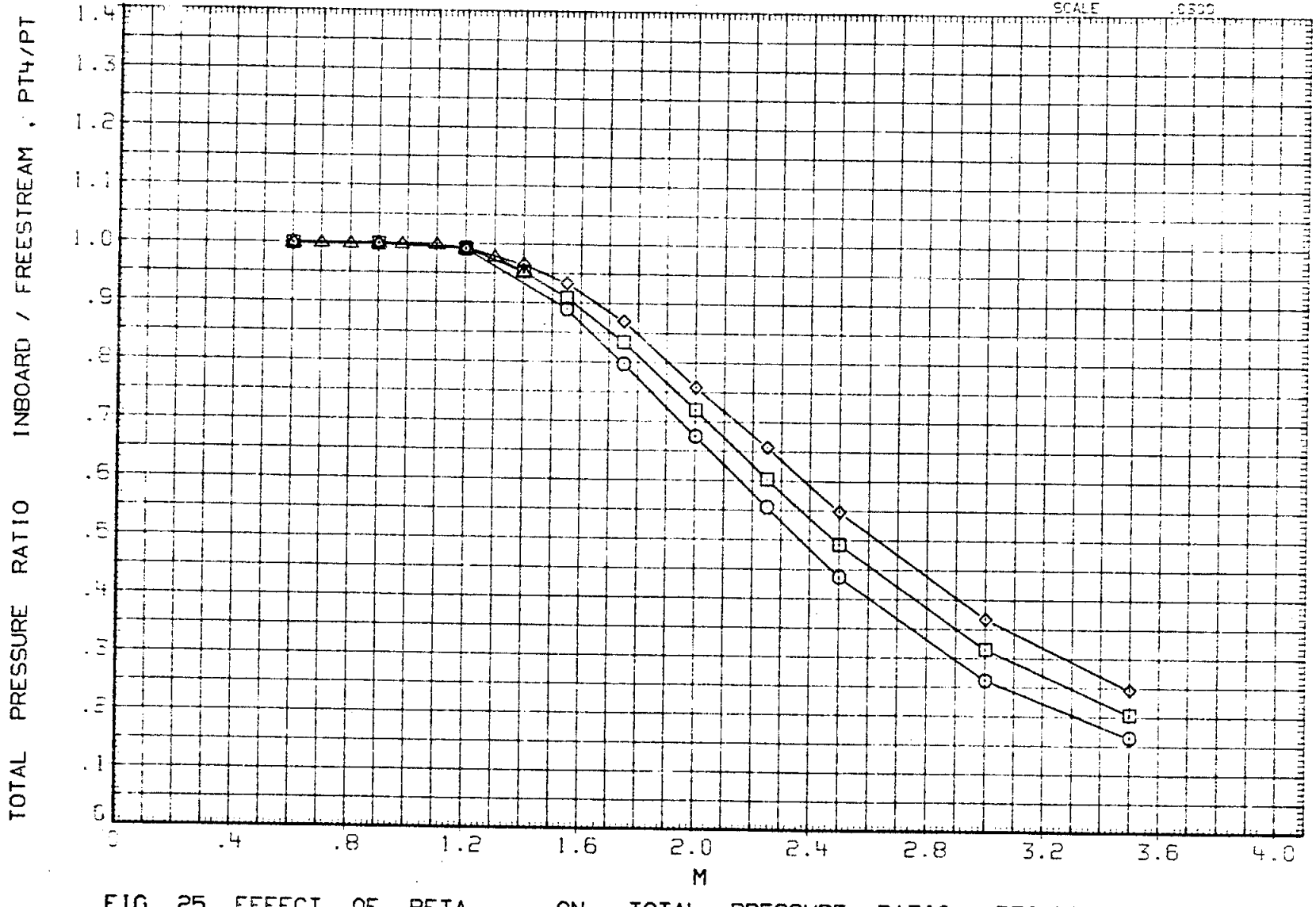


FIG. 25 EFFECT OF BETA ON TOTAL PRESSURE RATIO PTI/PT RIGHT RAKE

(C)ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
BE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
BE7805	◇□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
BE7807		ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
BE7801	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

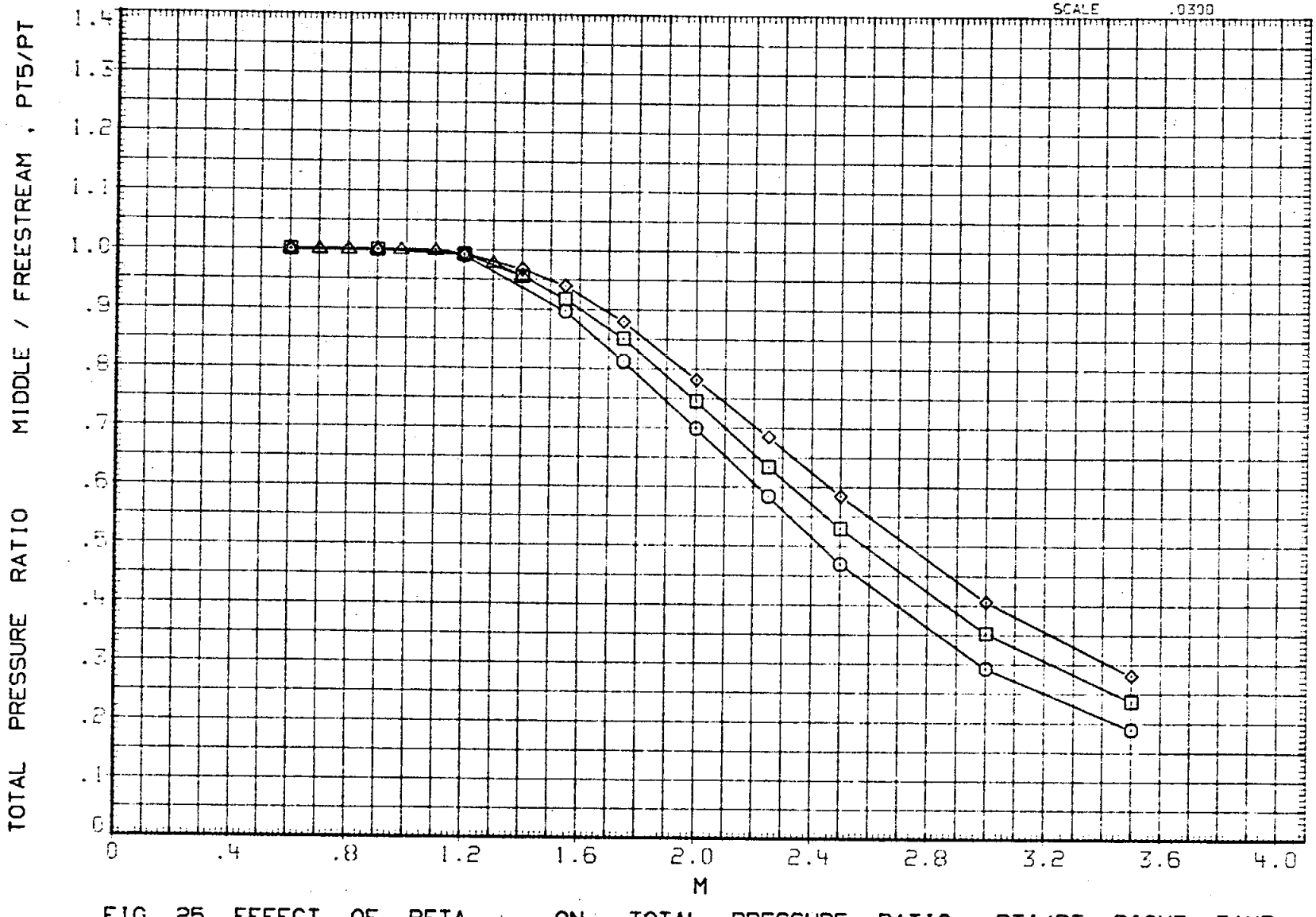


FIG. 25 EFFECT OF BETA ON TOTAL PRESSURE RATIO PTI/PT . RIGHT RAKE

(C)ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	RDFLAP
BE7803	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
BE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
BE7807	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
BE7801	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT
LREF	474.8000	IN.
BREF	935.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0200	

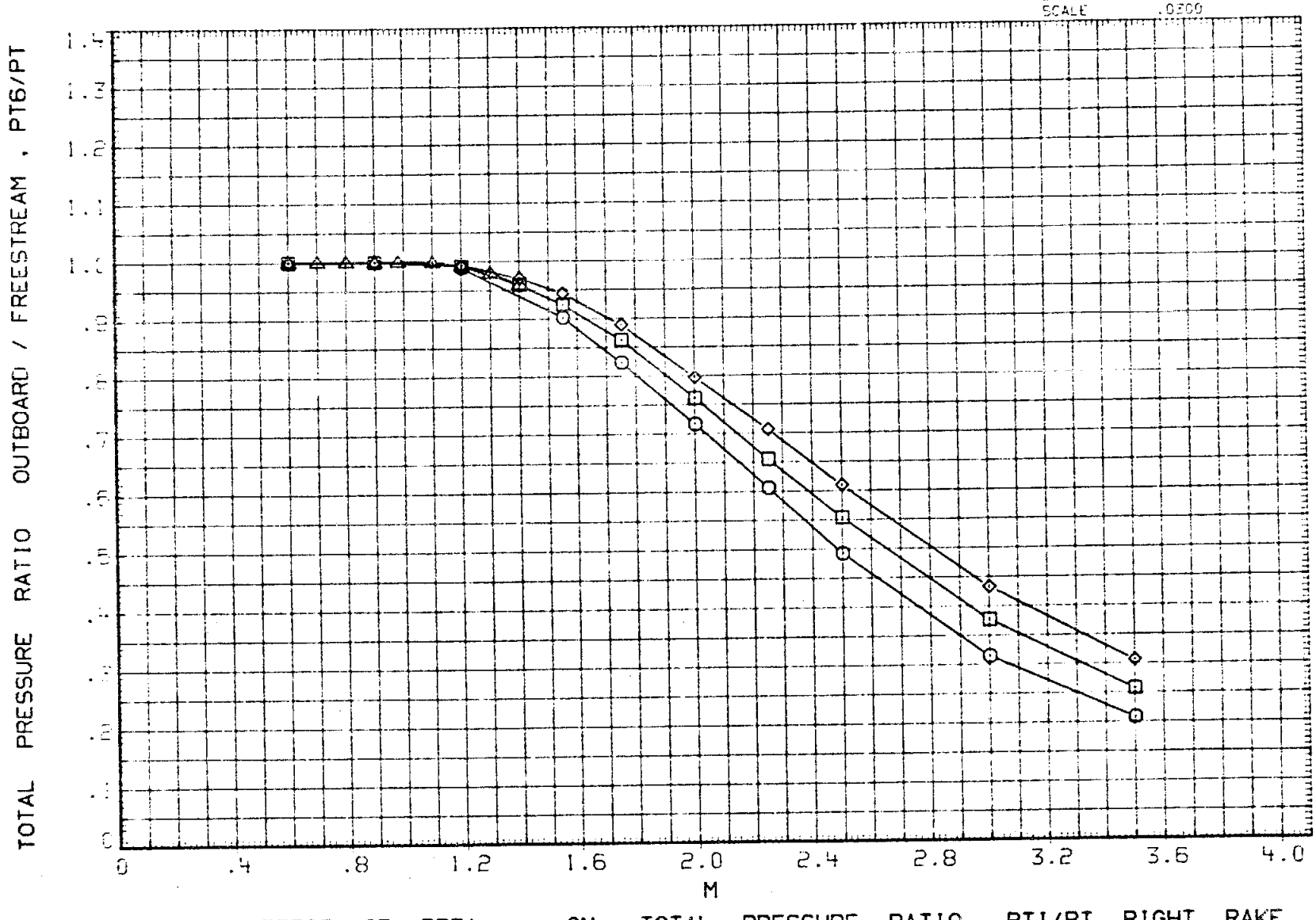


FIG. 25 EFFECT OF BETA ON TOTAL PRESSURE RATIO PTI/PT RIGHT RAKE

(C)ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION
BE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES
BE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES
BE7807	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES
BE7801	△	DATA NOT AVAILABLE

BETA	ELEVON	AILRON	BDFLAP
-5.000	.000	.000	-7.170
.000	.000	.000	-7.170
5.000	.000	.000	-7.170
.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

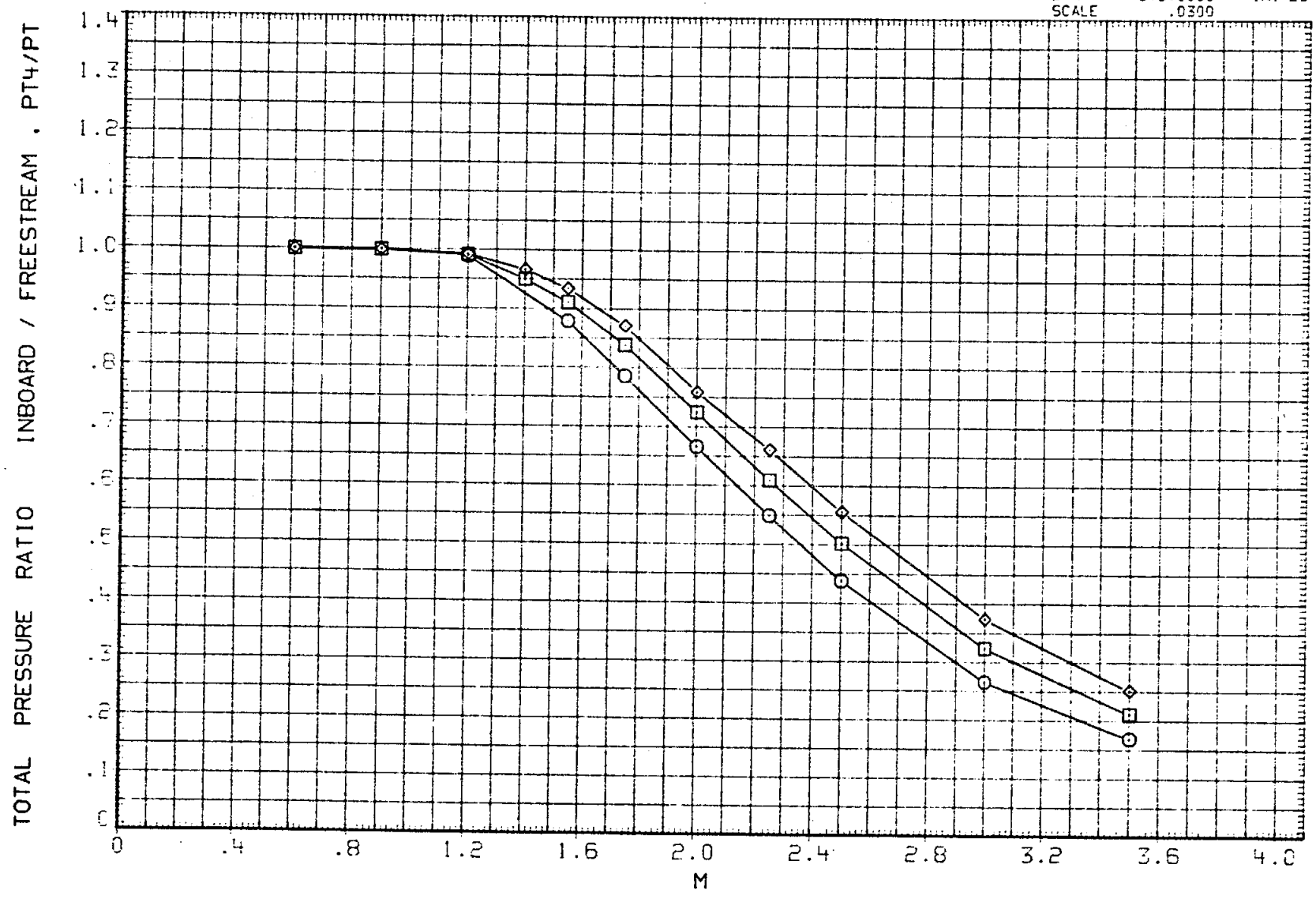


FIG. 25 EFFECT OF BETA ON TOTAL PRESSURE RATIO PTI/PT RIGHT RAKE

(D) ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	RDDR1F
BE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
BE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
BE7807	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
BE7801	△	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

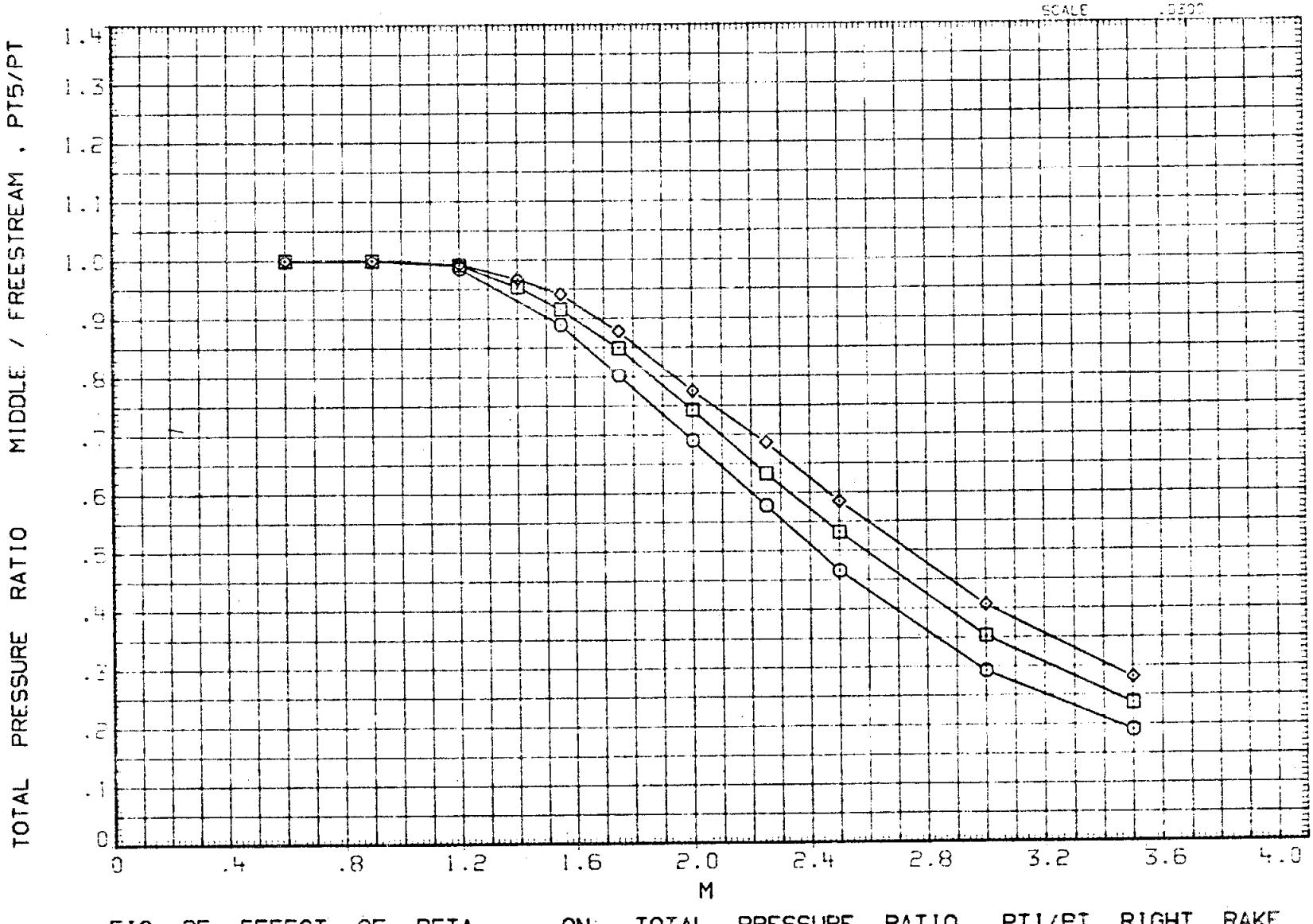


FIG. 25 EFFECT OF BETA ON TOTAL PRESSURE RATIO PTI/PT RIGHT RAKE

(D)ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION
BE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES
BE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES
BE7807	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES
BE7801	△	DATA NOT AVAILABLE

BETA	ELEVON	AILRON	BDFLAP
-5.000	.000	.000	-7.170
.000	.000	.000	-7.170
5.000	.000	.000	-7.170
.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

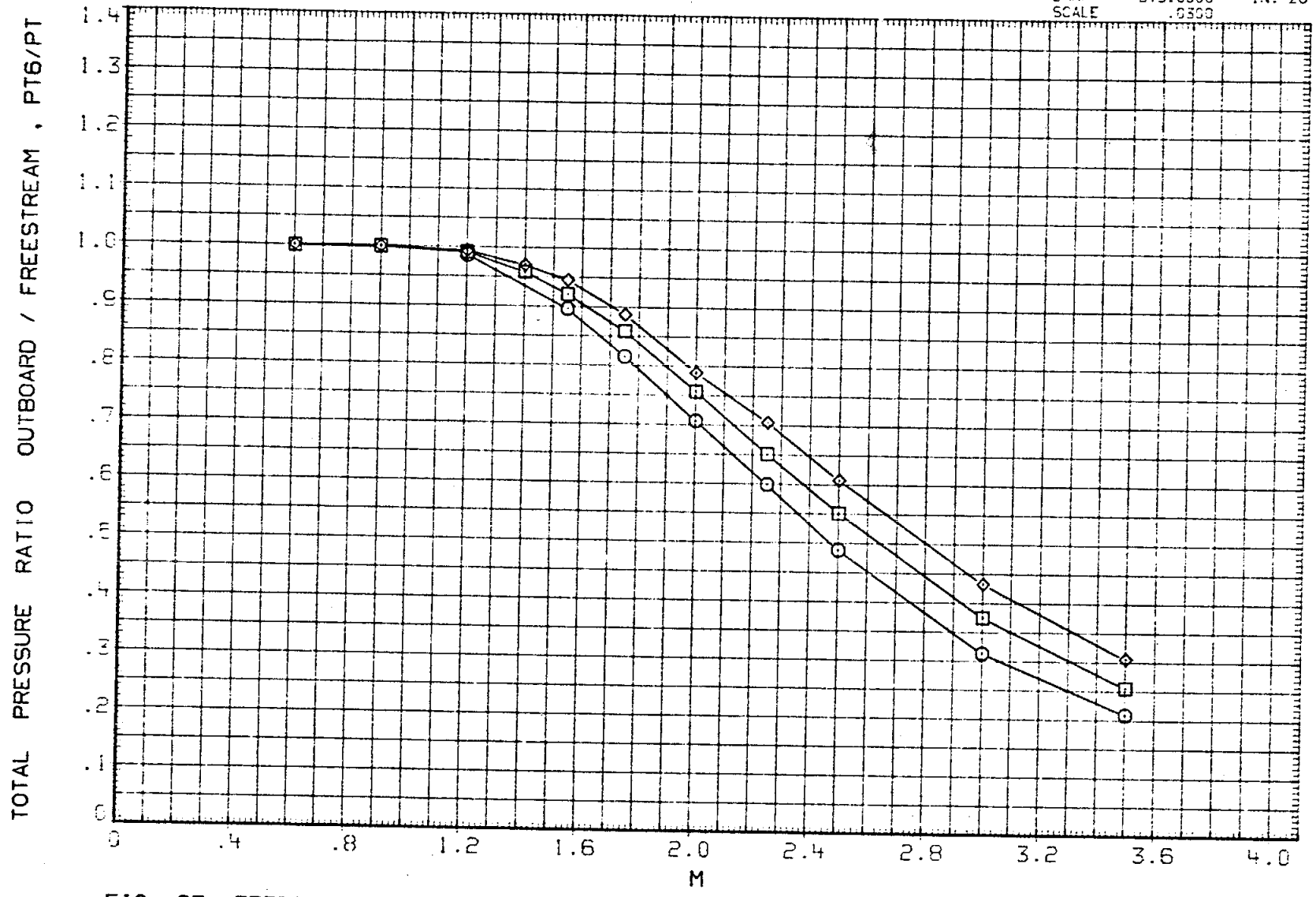


FIG. 25 EFFECT OF BETA ON TOTAL PRESSURE RATIO PTI/PT RIGHT RAKE

(D)ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	RUDDER
BE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
BE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
BE7807	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
BE7801	△	ARC 11-97-87-094 OA161 ORBITER + WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

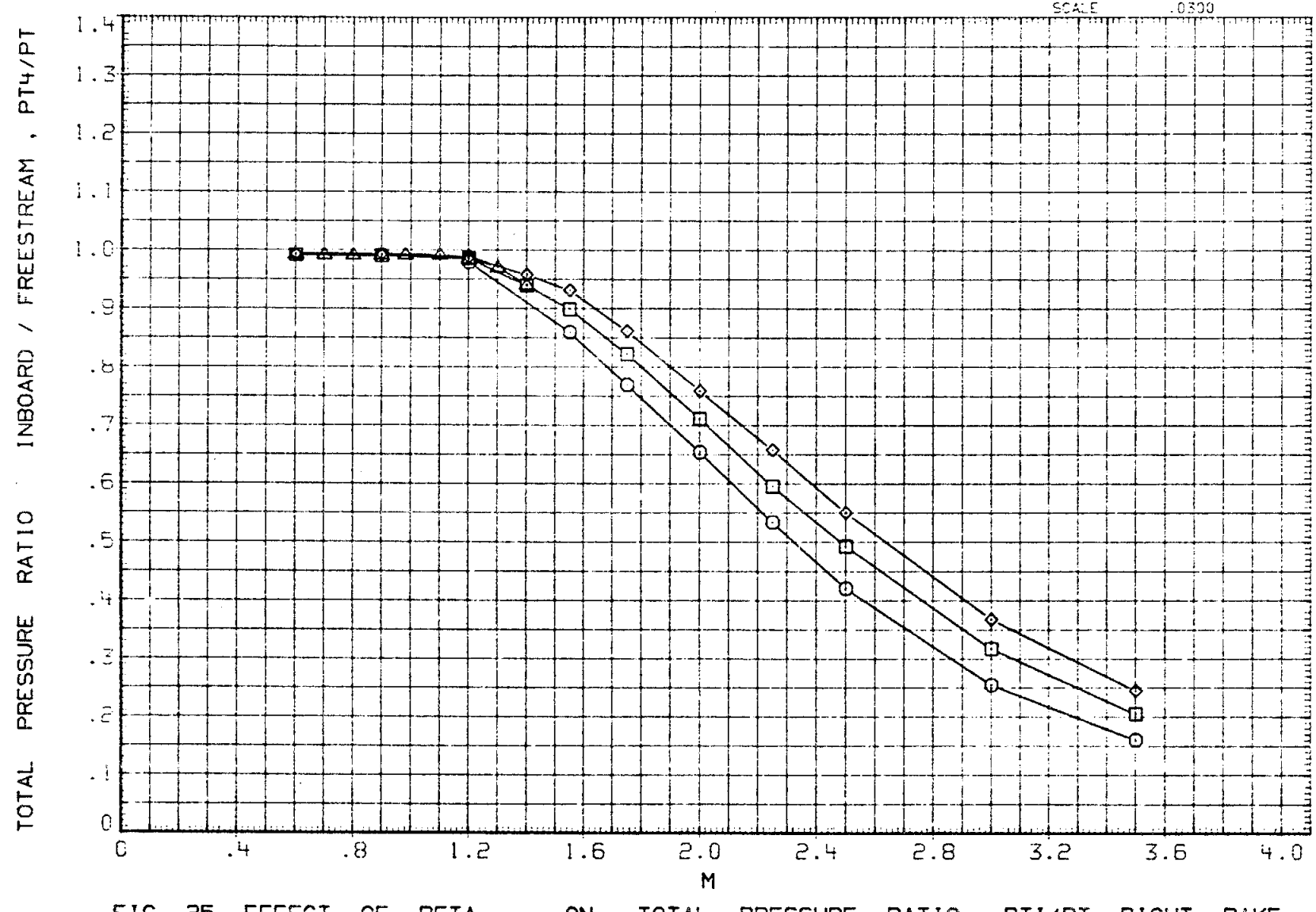


FIG. 25 EFFECT OF BETA ON TOTAL PRESSURE RATIO PTI/PT RIGHT RAKE

(E)ALPHA = 24.00

DATA SET	SYMBOL	CONFIGURATION
6E7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES
6E7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES
6E7807	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES
6E7801	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES

BETA	ELEVON	AILRON	BDFLAP
-5.000	.000	.000	-7.170
.000	.000	.000	-7.170
5.000	.000	.000	-7.170
.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.5800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

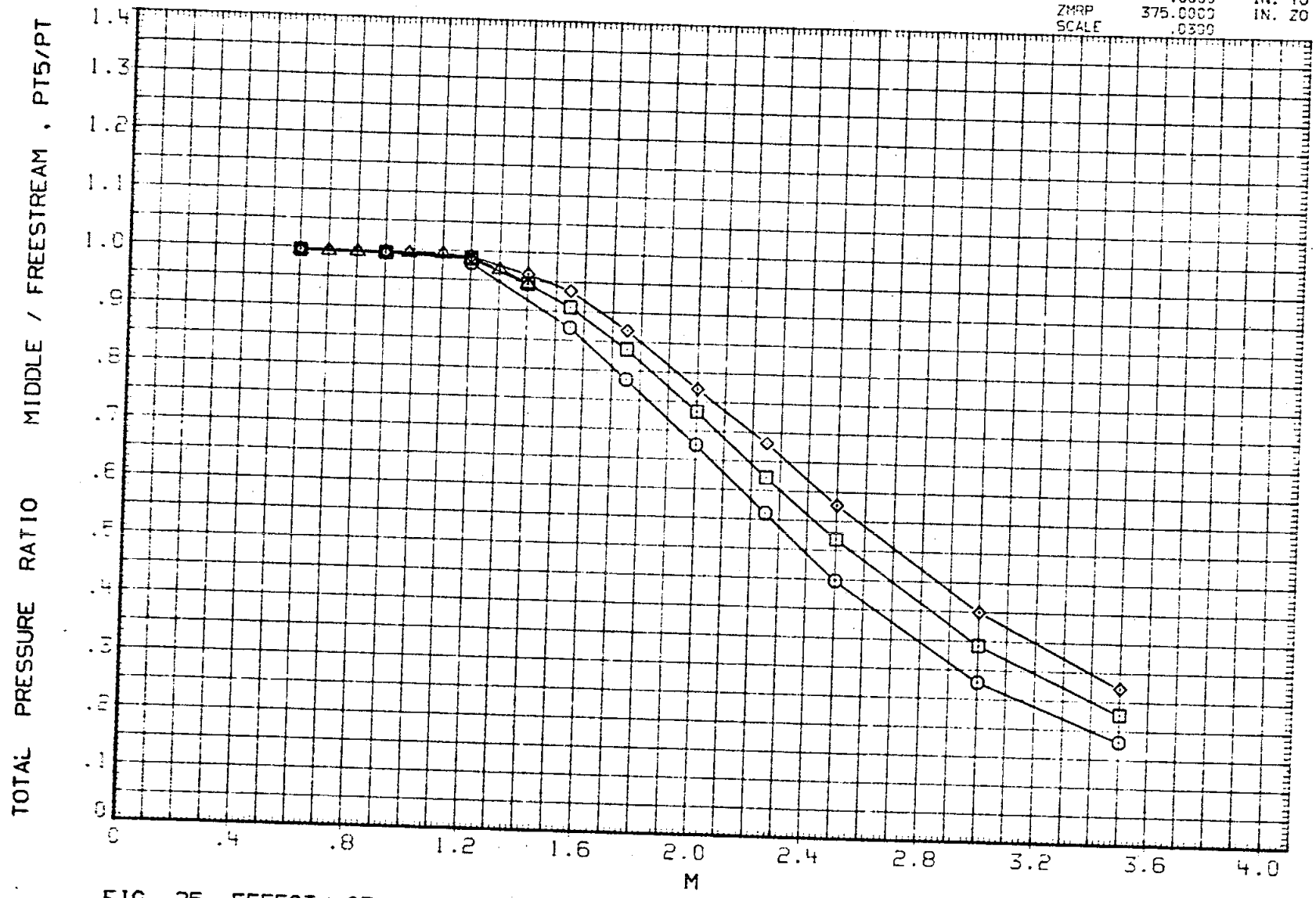


FIG. 25 EFFECT OF BETA ON TOTAL PRESSURE RATIO PTI/PT RIGHT RAKE

(E)ALPHA = 24.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	EXPLAN
BE7807	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
BE7805	□	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
BE7807	◇	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
BE7801	△	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0600	

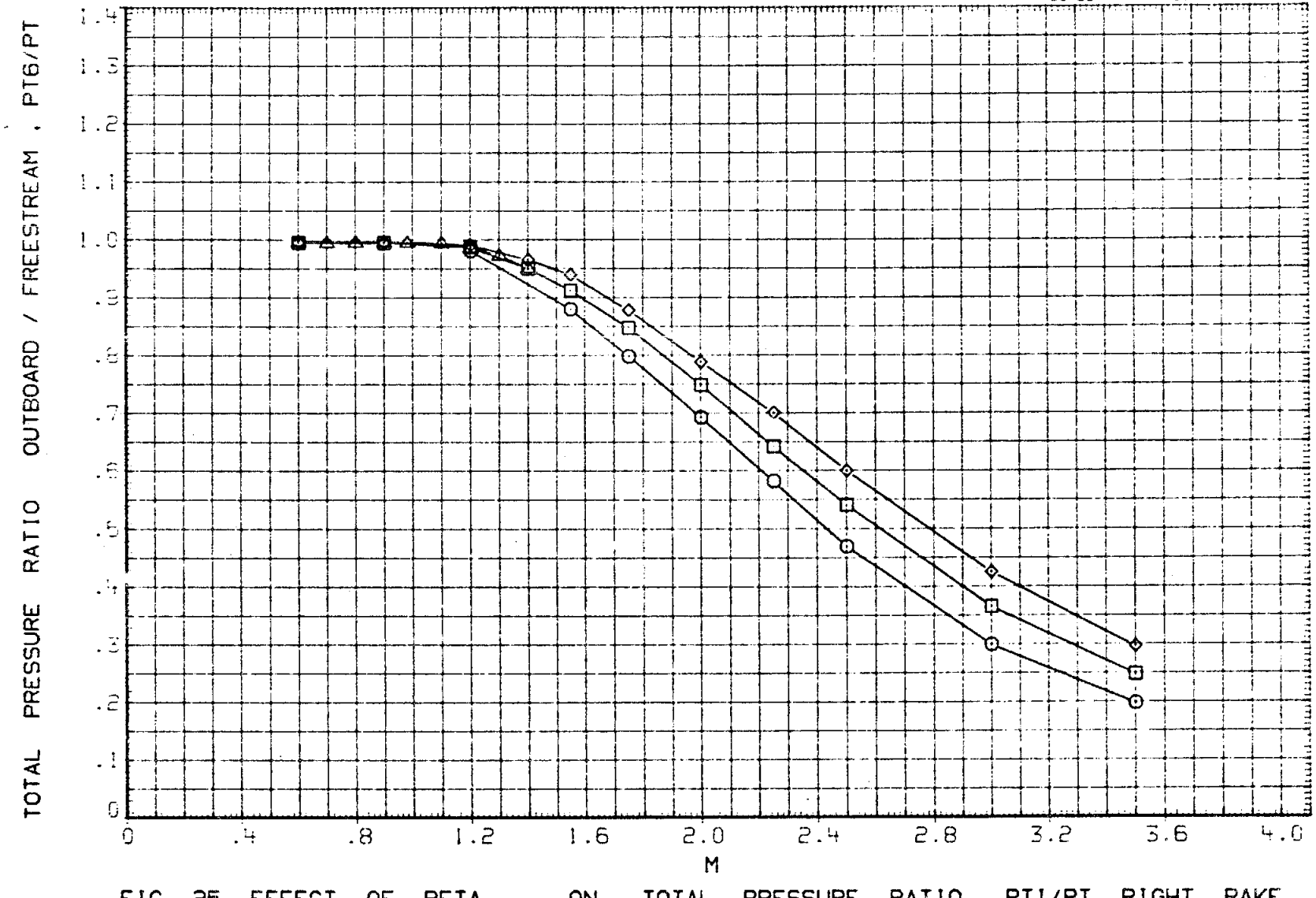


FIG. 25 EFFECT OF BETA ON TOTAL PRESSURE RATIO PTI/PT RIGHT RAKE

(E)ALPHA = 24.00

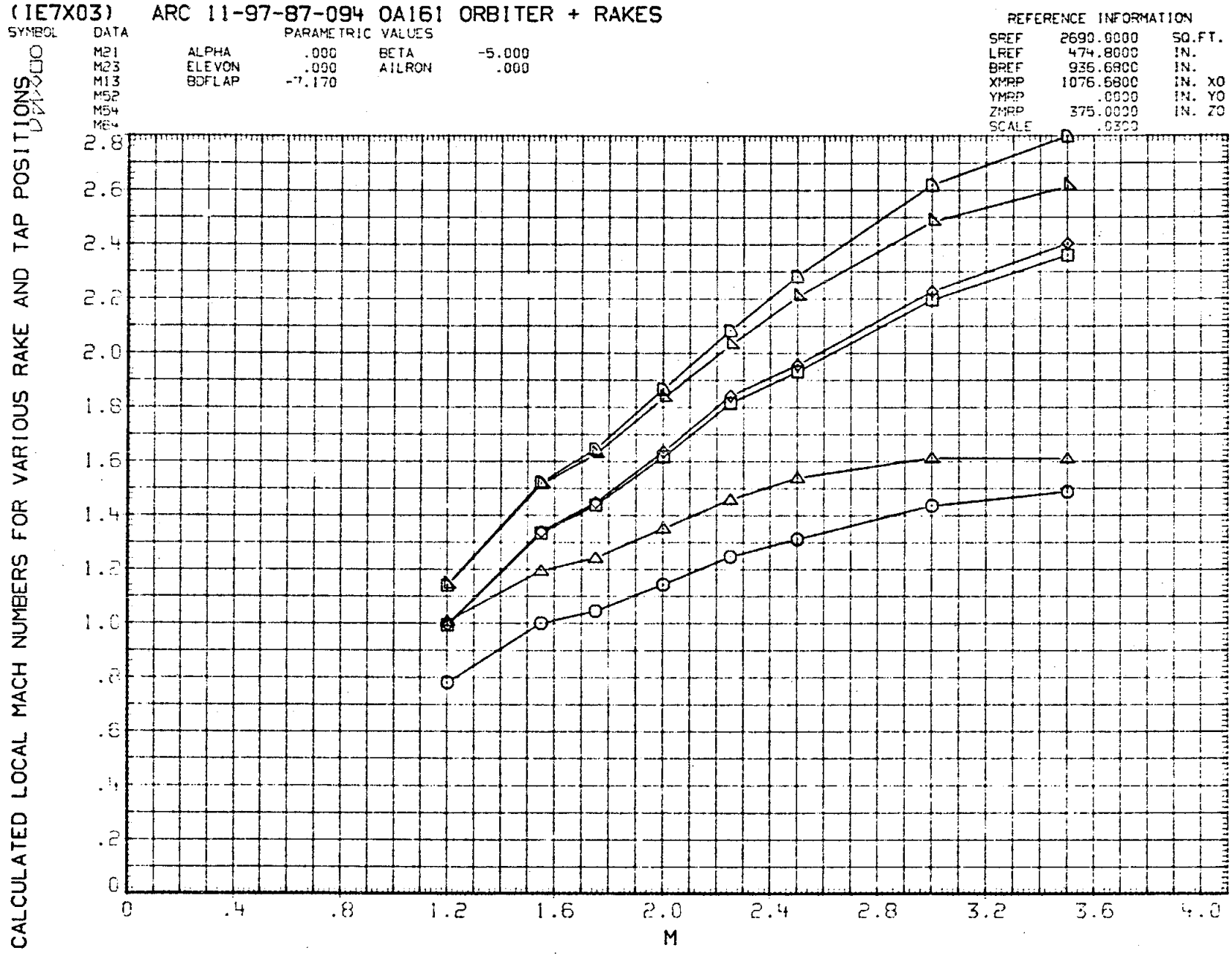


FIG. 26 EFFECT OF POSITION ON CALCULATED LOCAL MACH NUMBER BOTH RAKES

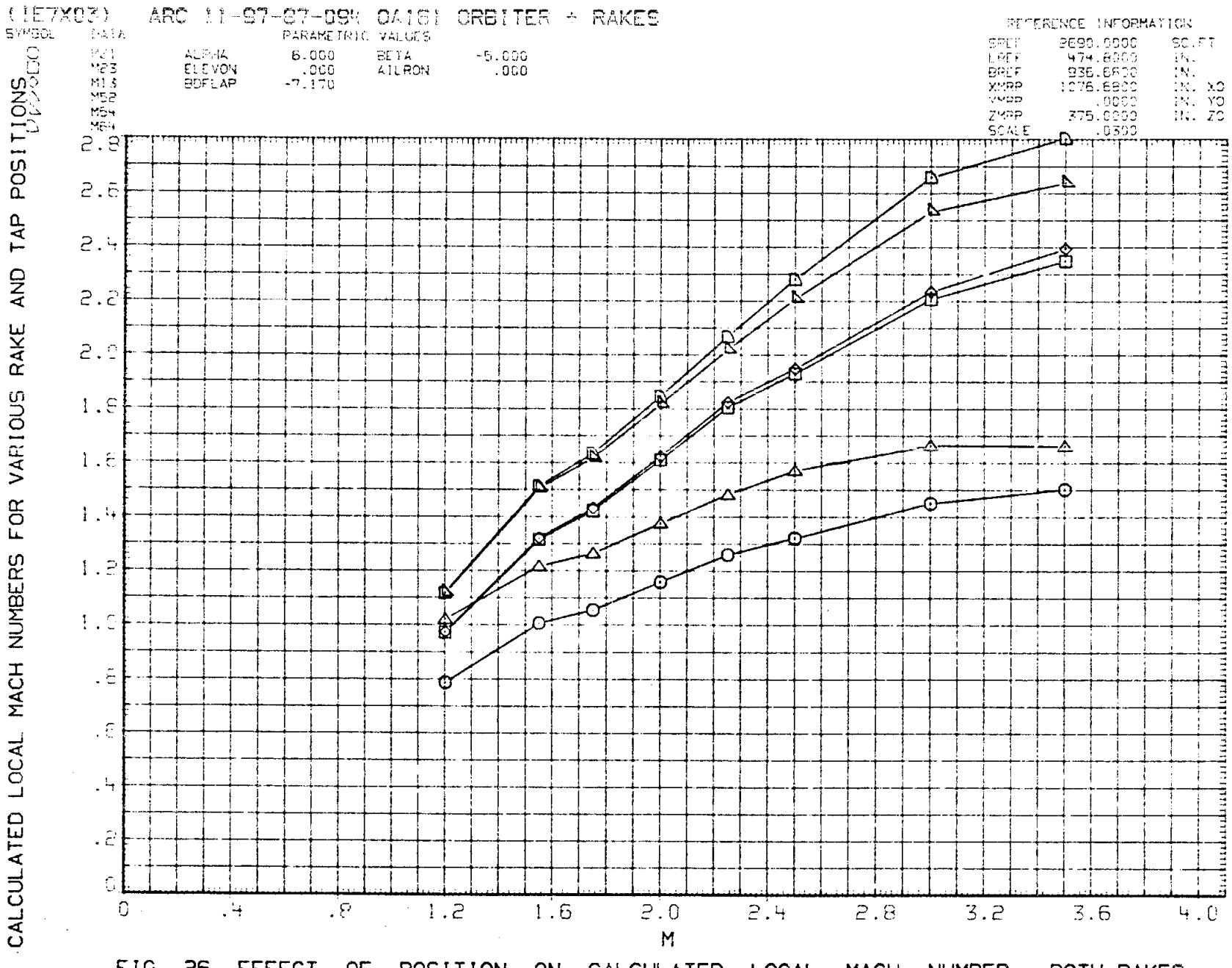


FIG. 26 EFFECT OF POSITION ON CALCULATED LOCAL MACH NUMBER BOTH RAKES

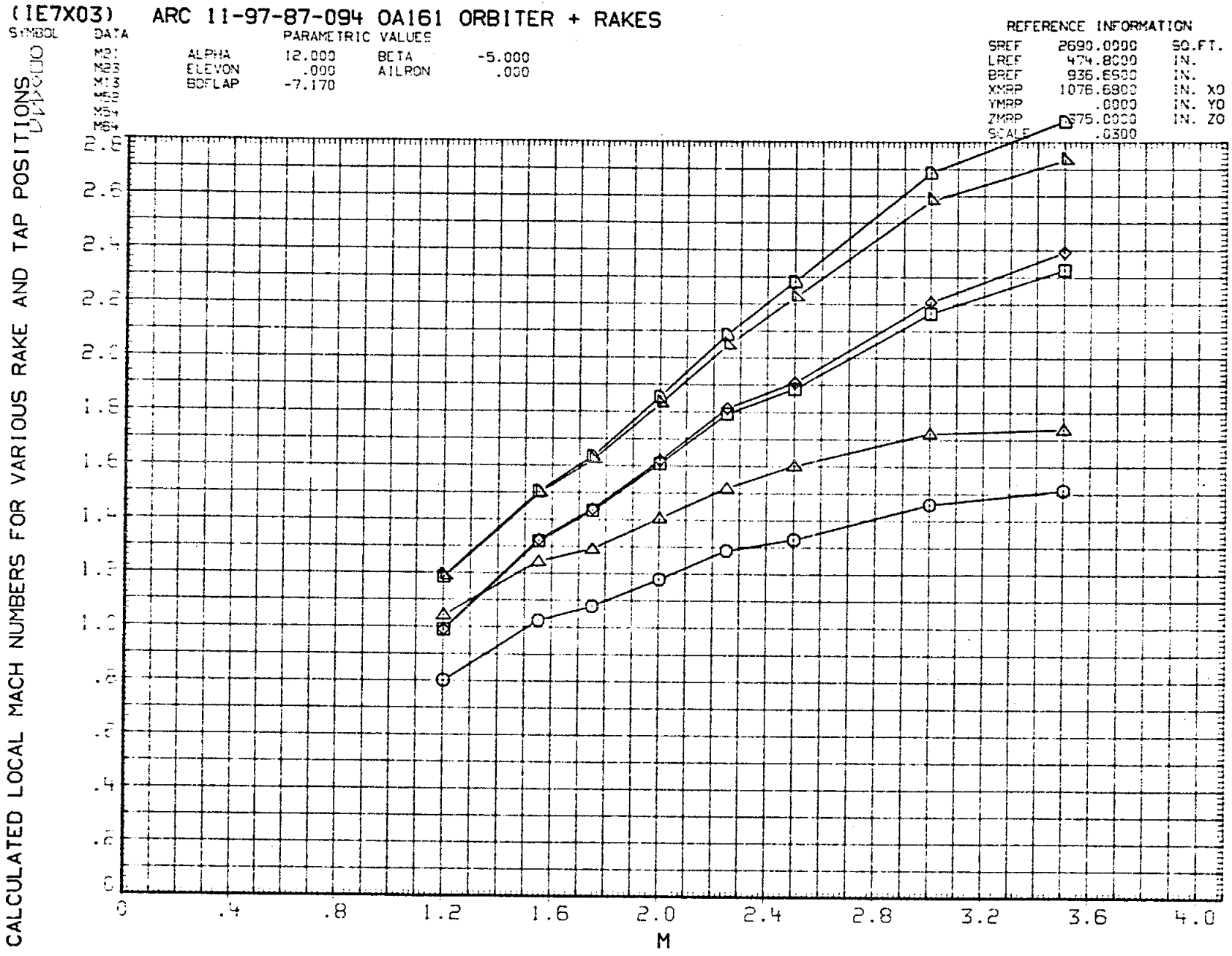


FIG. 26 EFFECT OF POSITION ON CALCULATED LOCAL MACH NUMBER BOTH RAKES

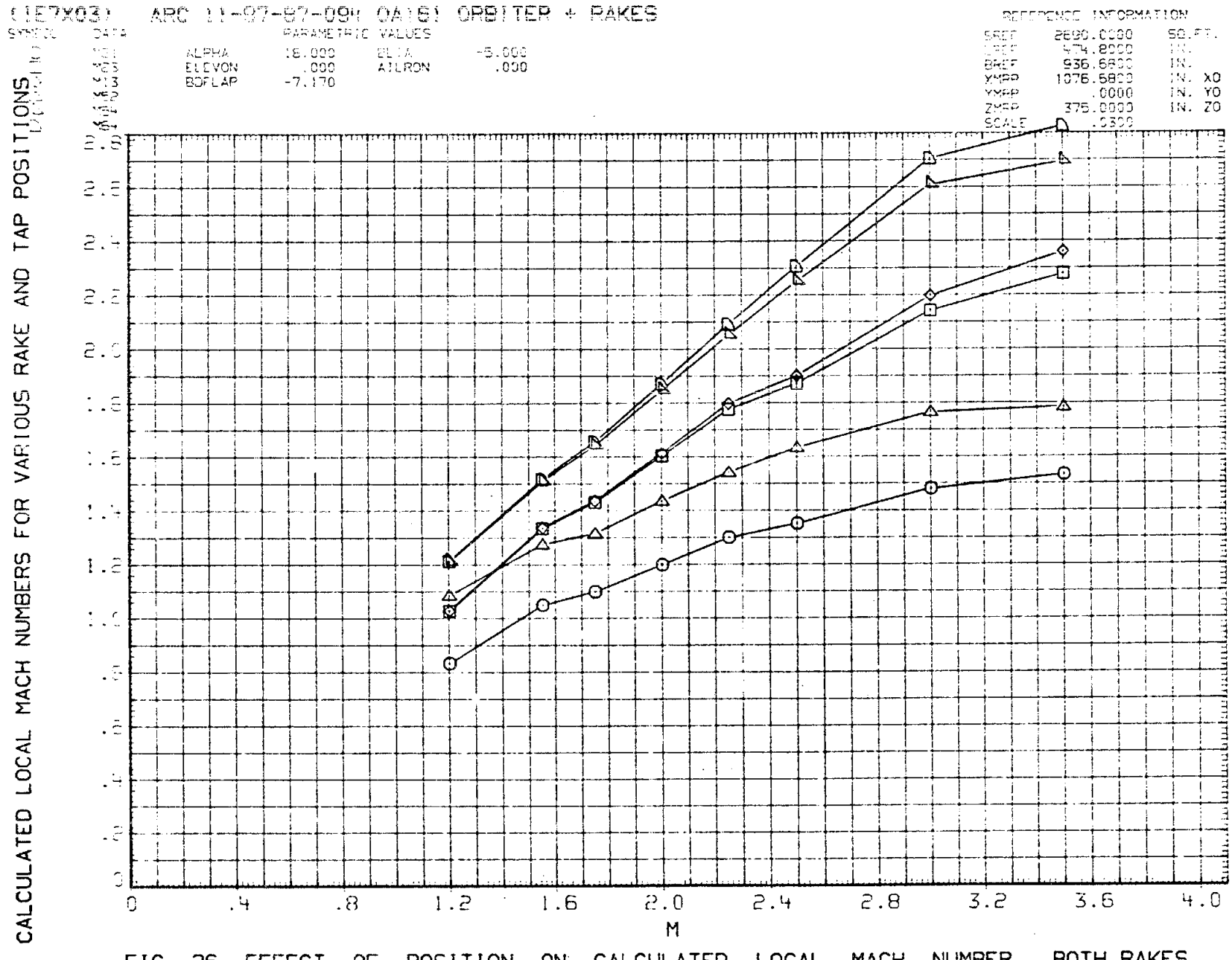


FIG. 26 EFFECT OF POSITION ON CALCULATED LOCAL MACH NUMBER BOTH RAKES

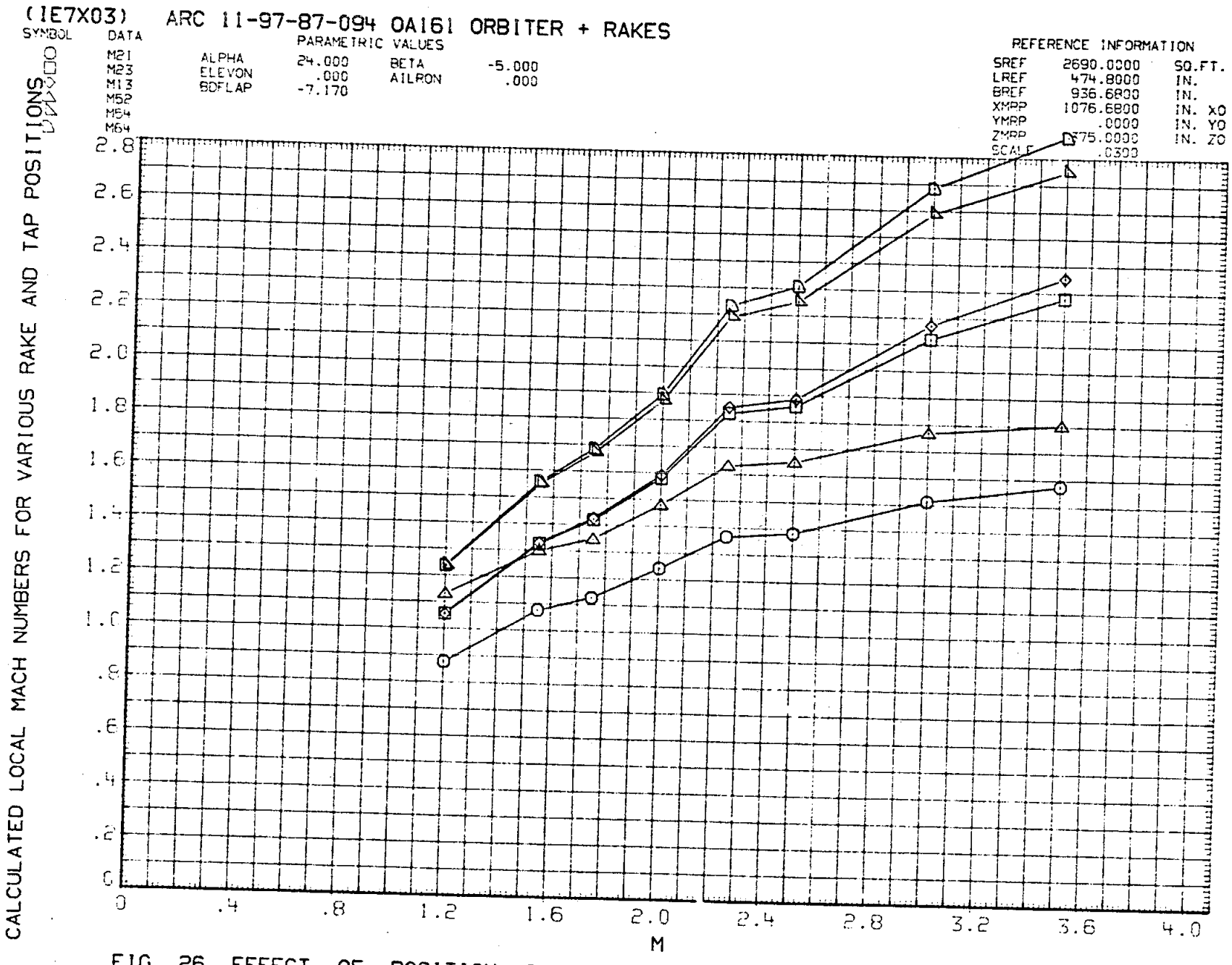


FIG. 26 EFFECT OF POSITION ON CALCULATED LOCAL MACH NUMBER BOTH RAKES

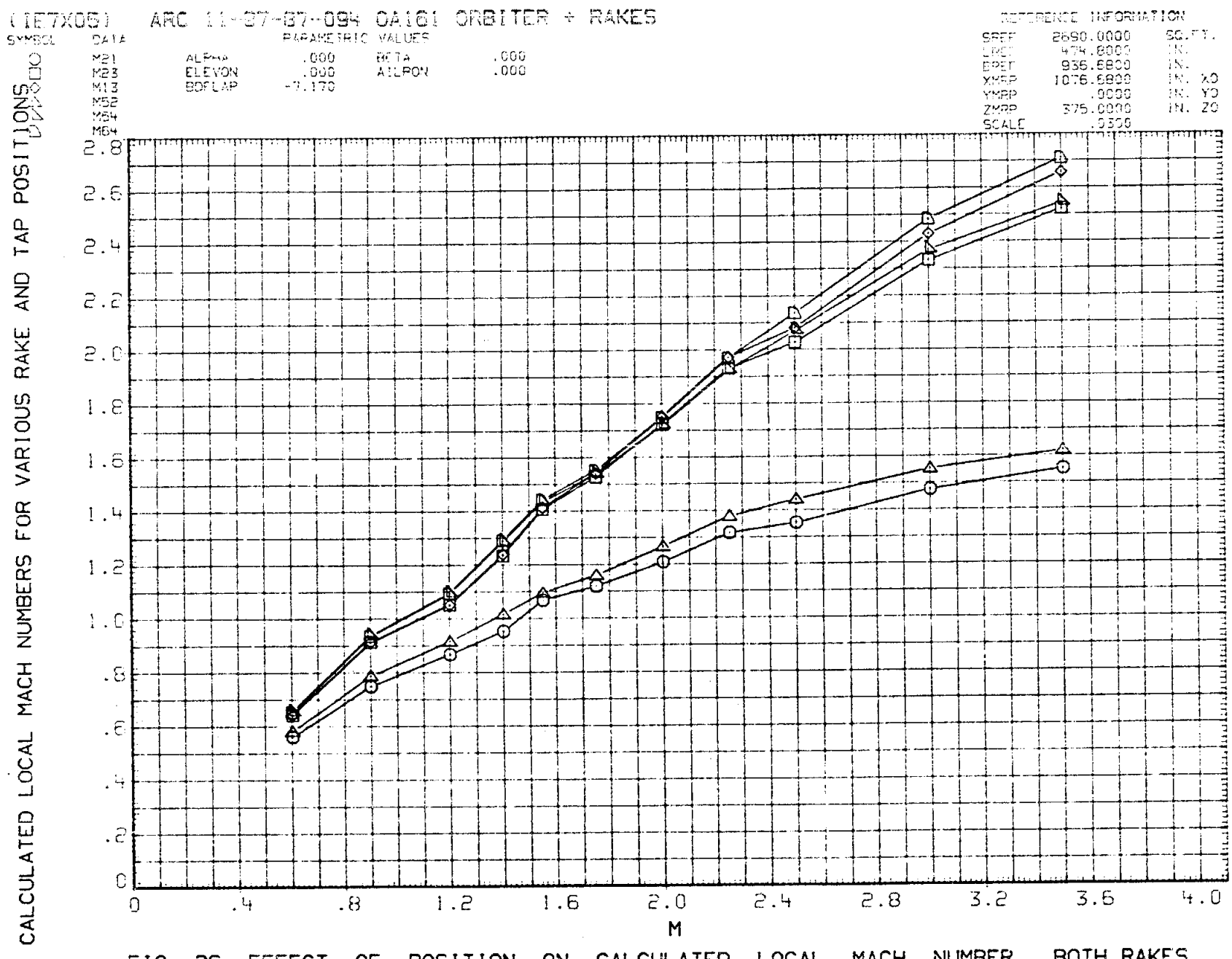


FIG. 26 EFFECT OF POSITION ON CALCULATED LOCAL MACH NUMBER BOTH RAKES

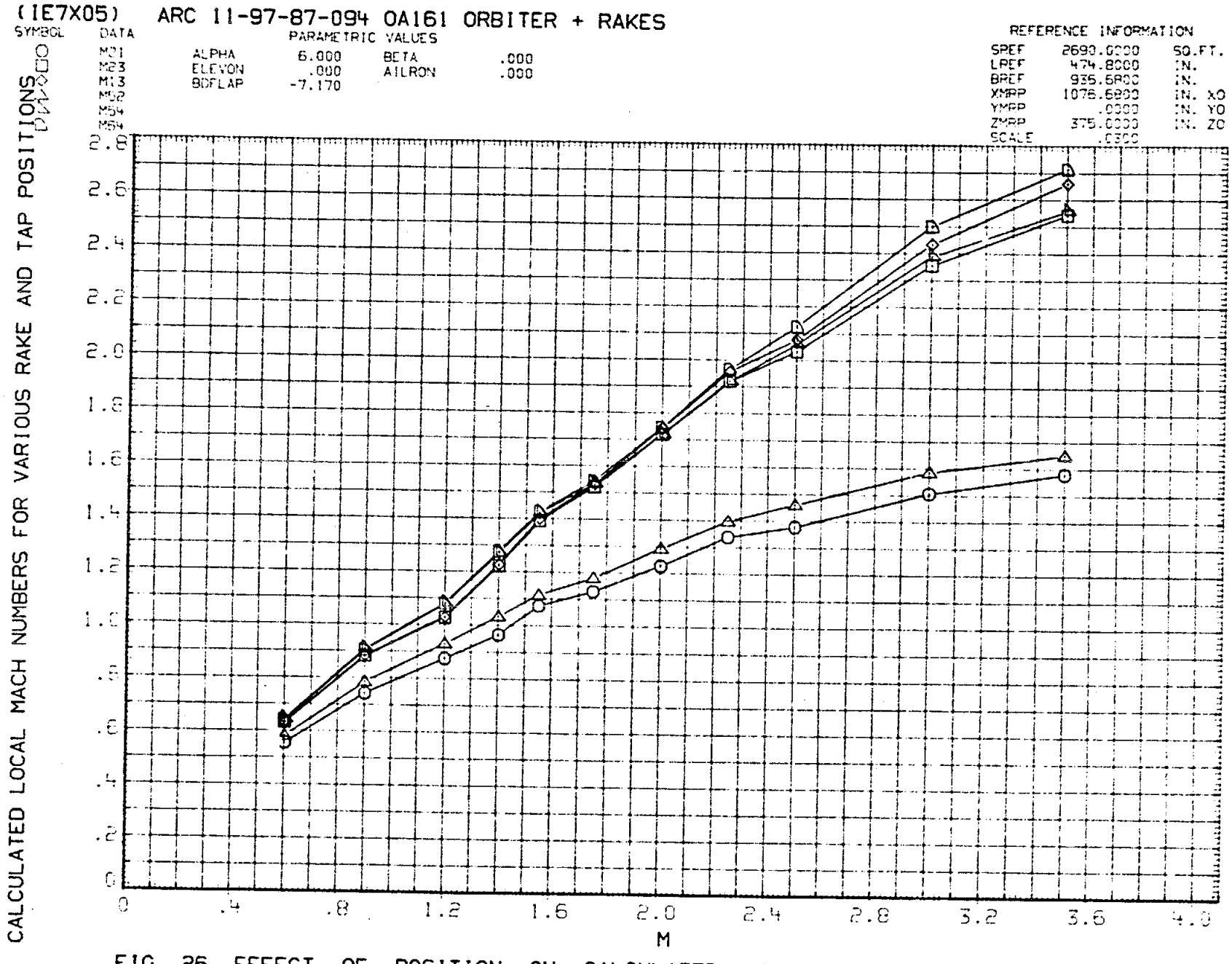


FIG. 26 EFFECT OF POSITION ON CALCULATED LOCAL MACH NUMBER BOTH RAKES

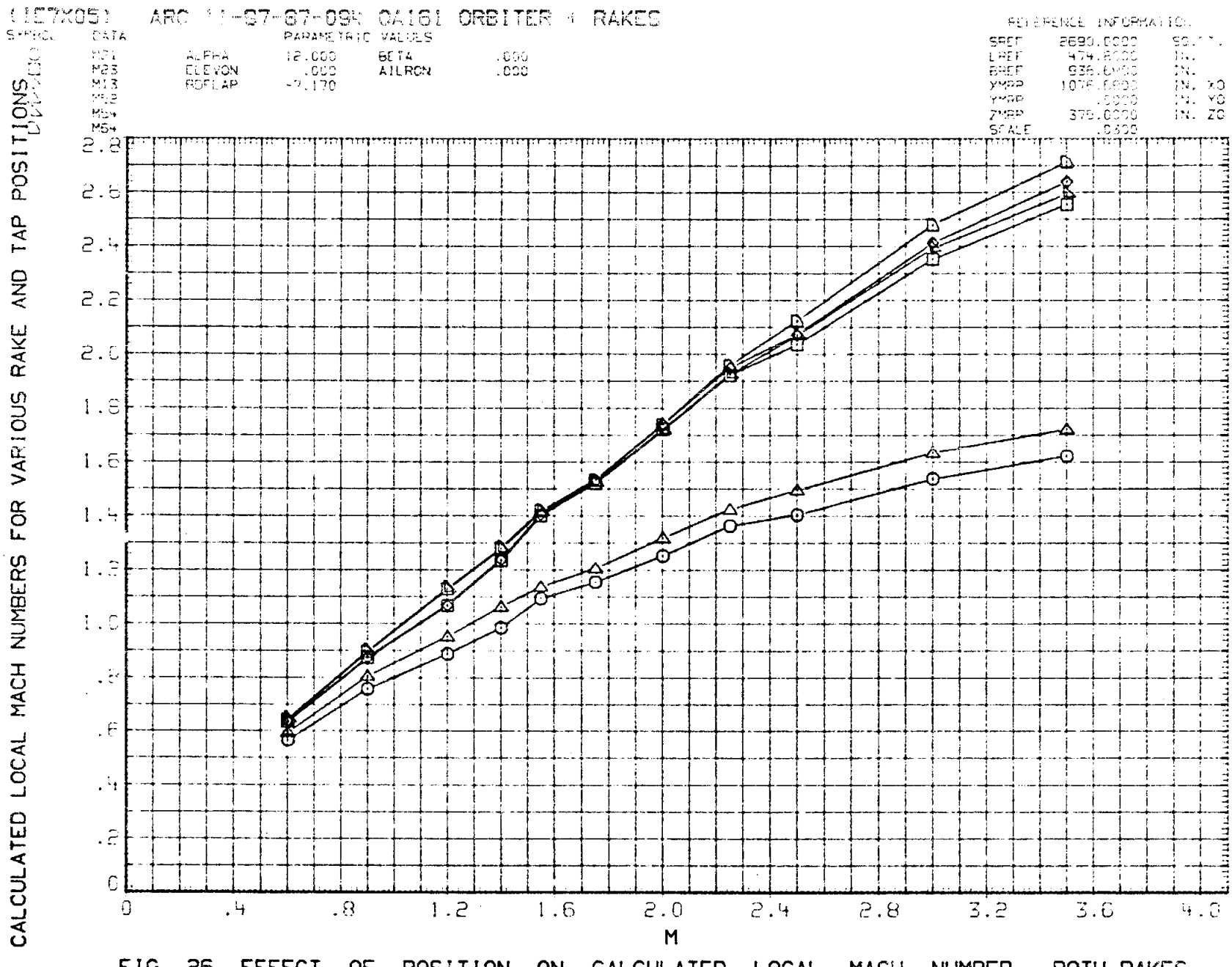


FIG. 26 EFFECT OF POSITION ON CALCULATED LOCAL MACH NUMBER BOTH RAKES

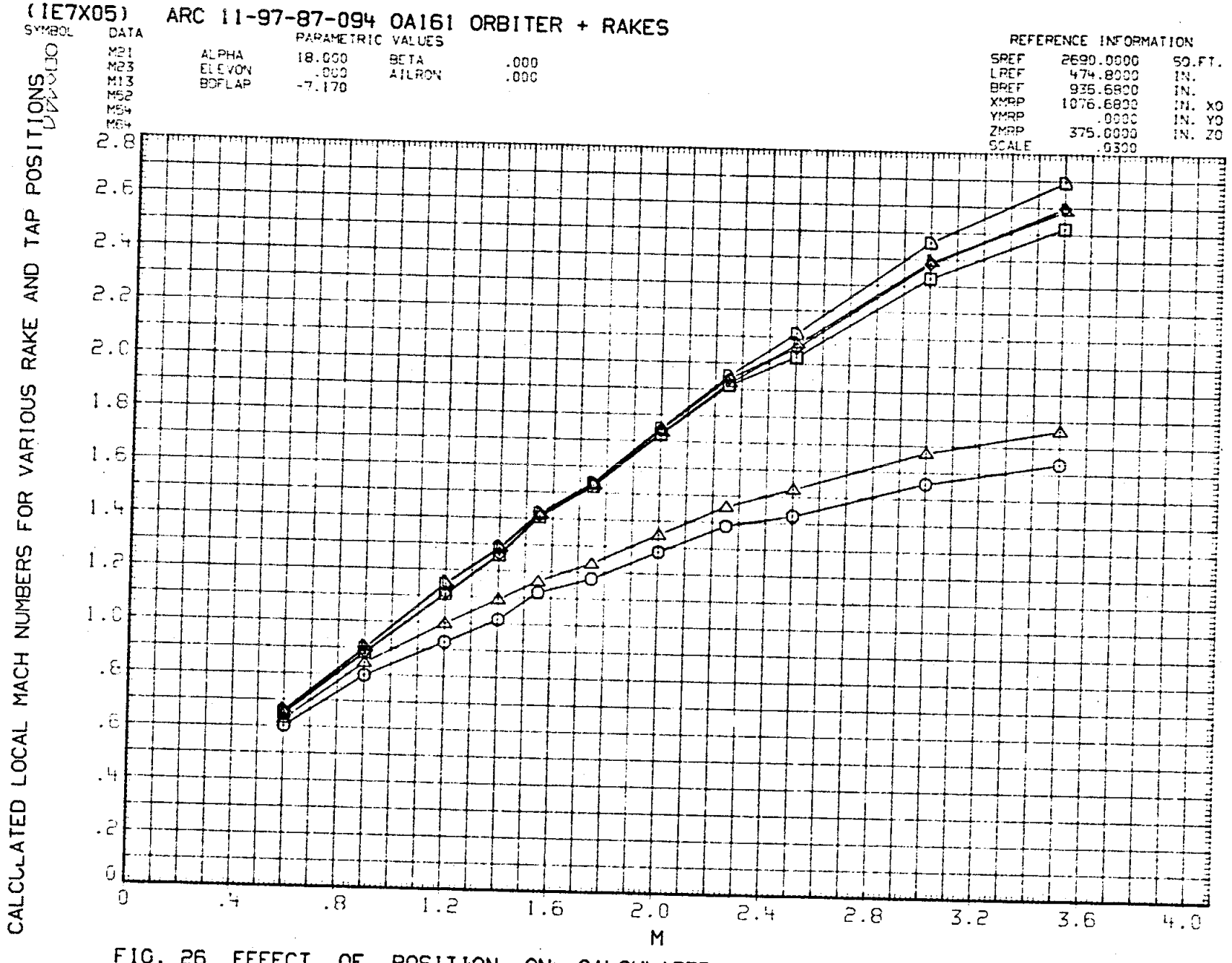


FIG. 26 EFFECT OF POSITION ON CALCULATED LOCAL MACH NUMBER BOTH RAKES

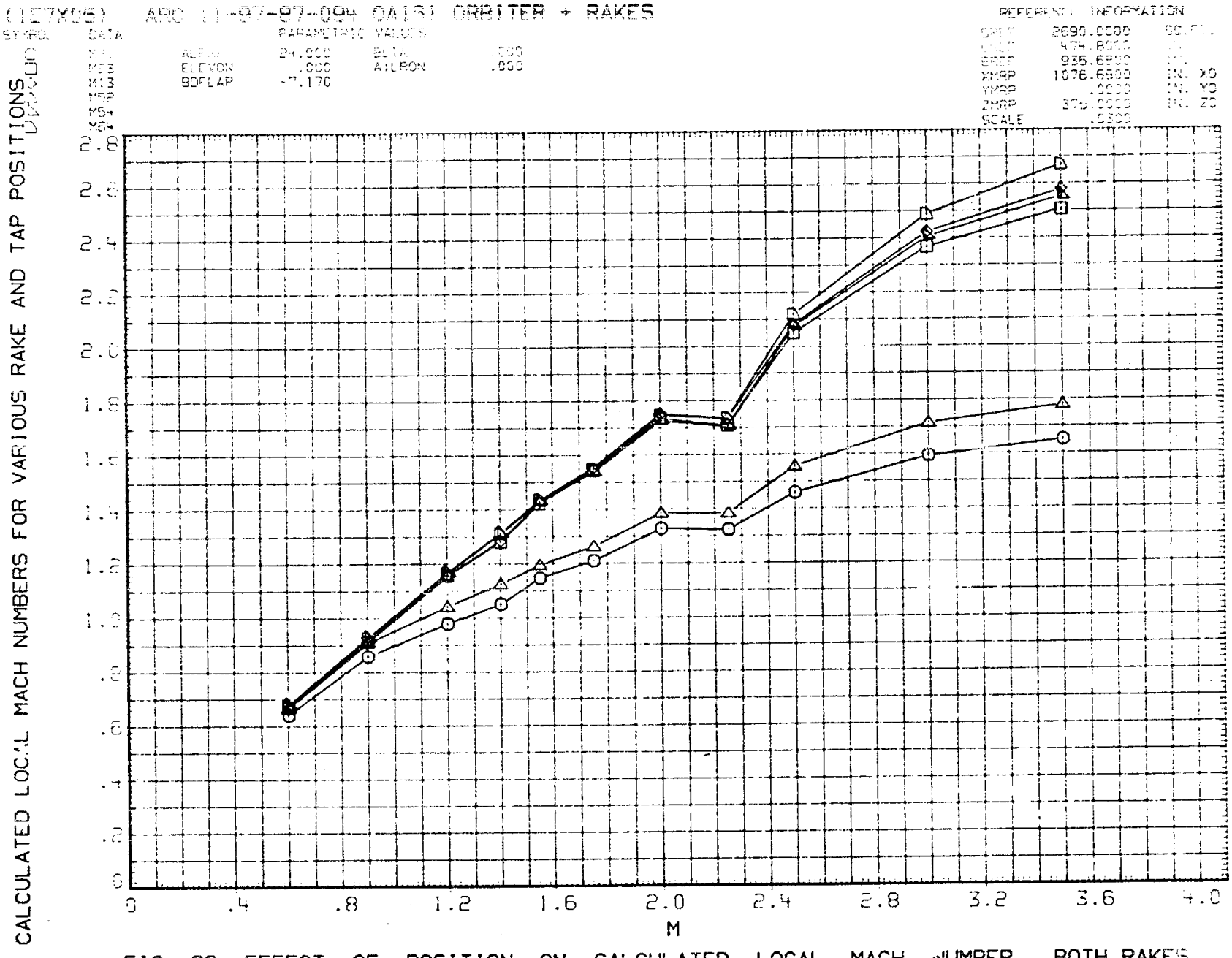


FIG. 26 EFFECT OF POSITION ON CALCULATED LOCAL MACH NUMBER BOTH RAKES

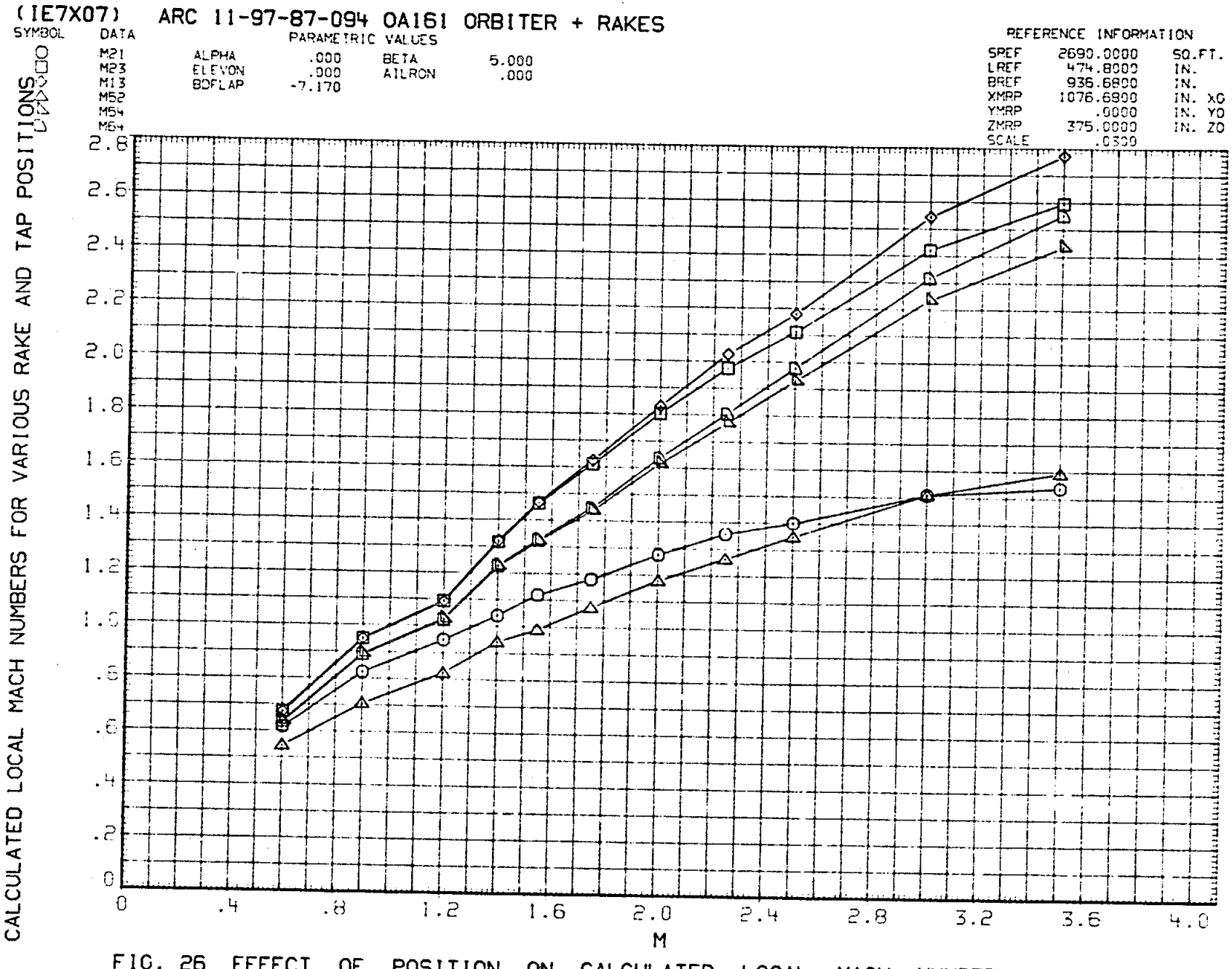


FIG. 26 EFFECT OF POSITION ON CALCULATED LOCAL MACH NUMBER BOTH RAKES

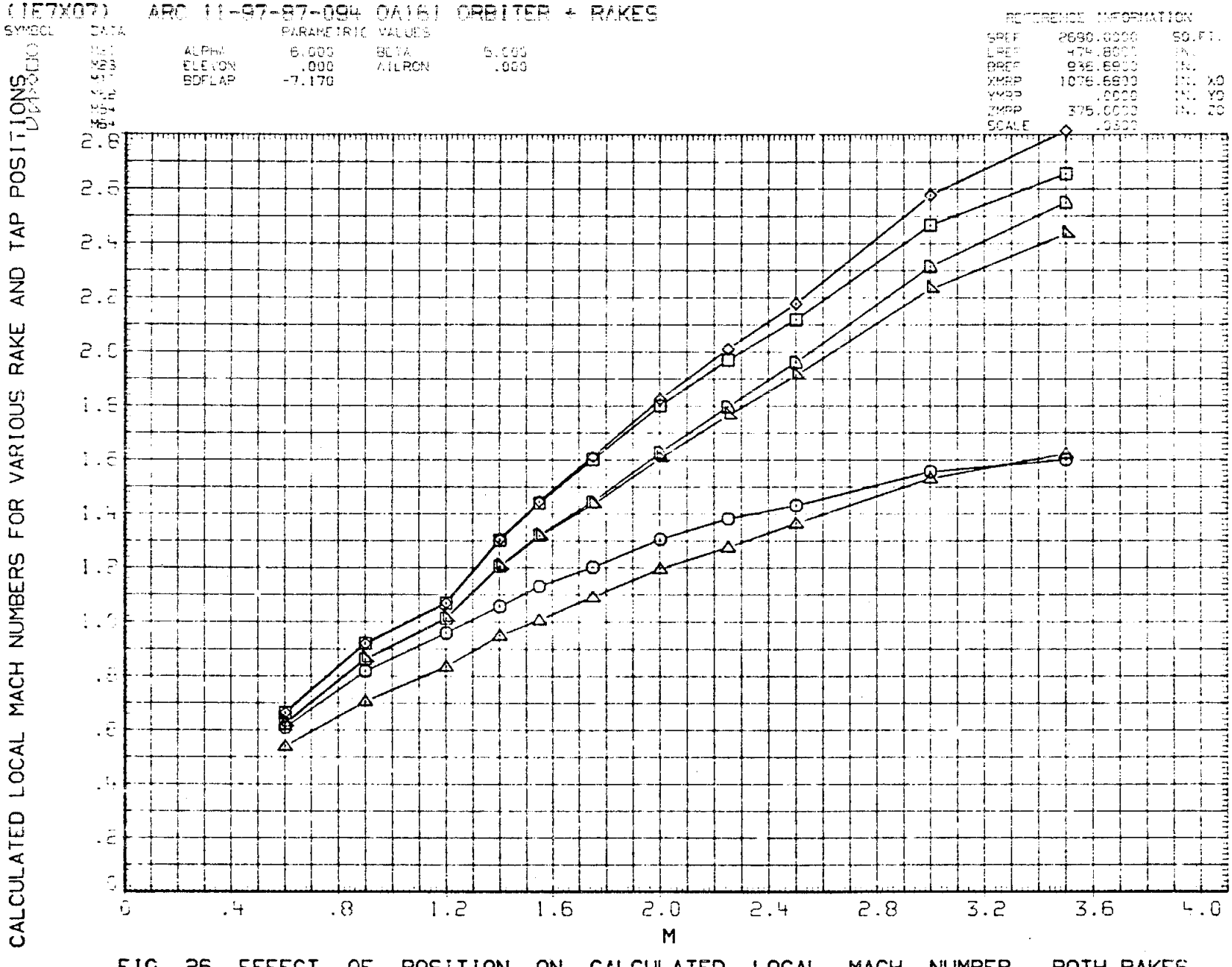


FIG. 26 EFFECT OF POSITION ON CALCULATED LOCAL MACH NUMBER BOTH RAKES

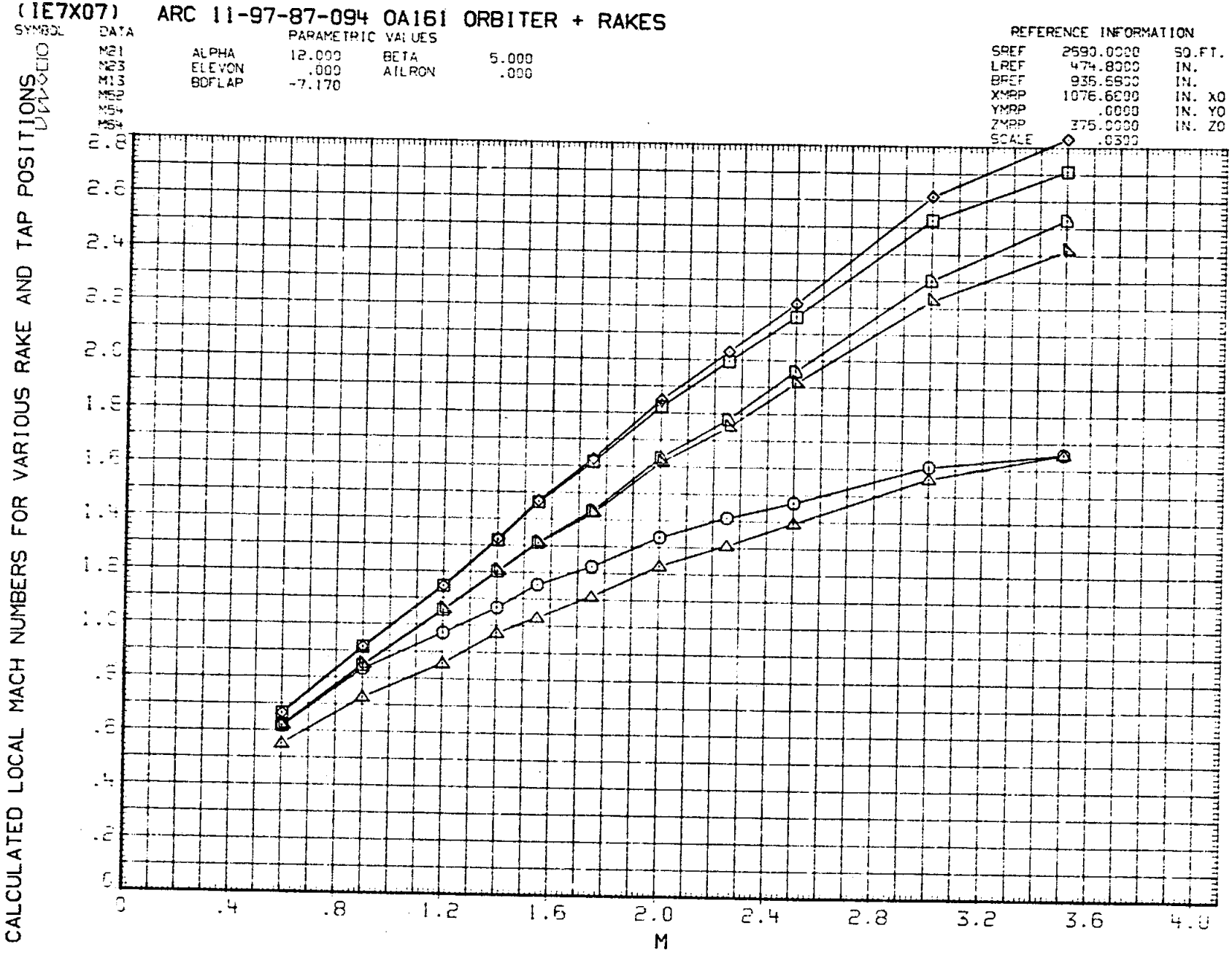


FIG. 26 EFFECT OF POSITION ON CALCULATED LOCAL MACH NUMBER BOTH RAKES

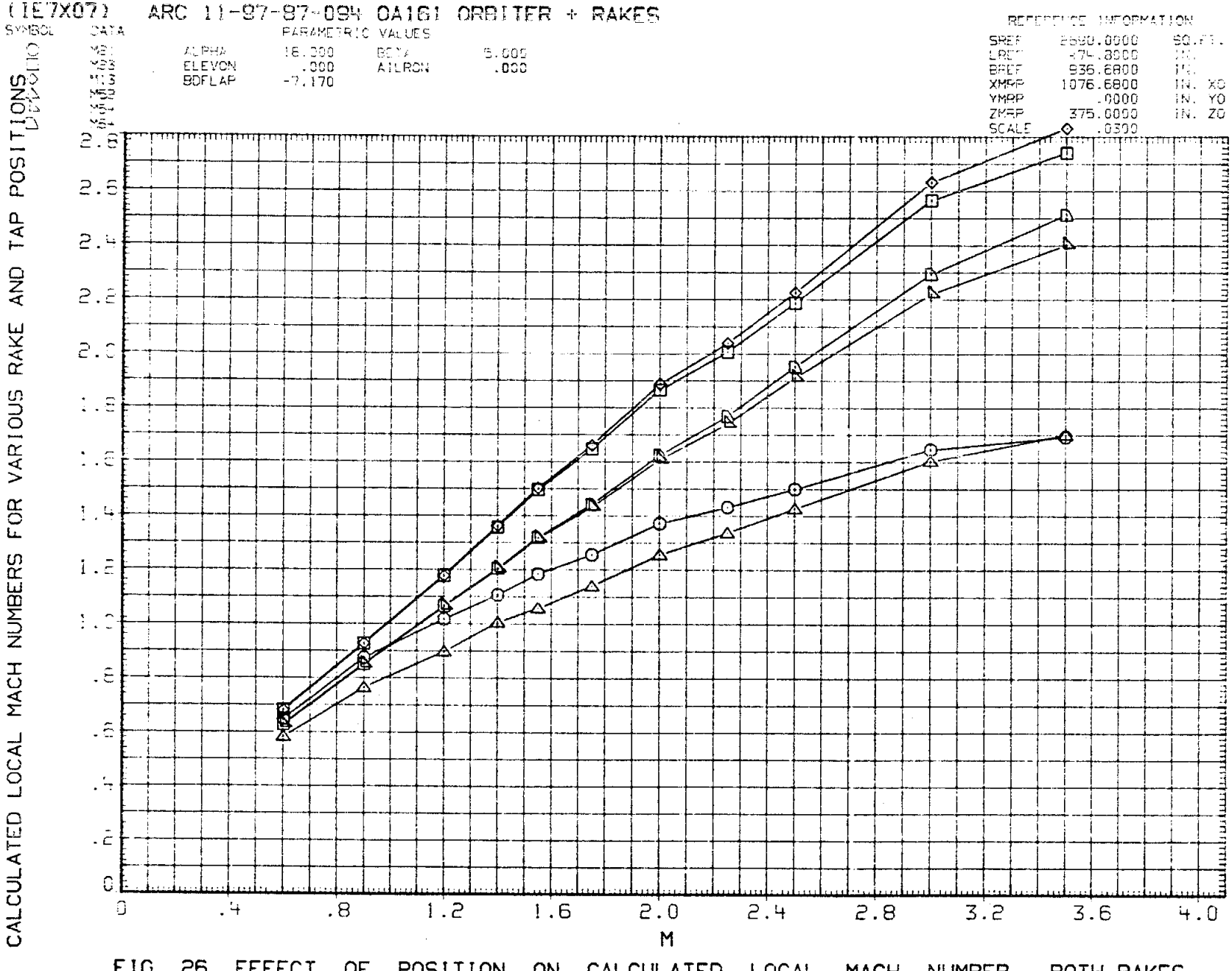


FIG. 26 EFFECT OF POSITION ON CALCULATED LOCAL MACH NUMBER BOTH RAKES

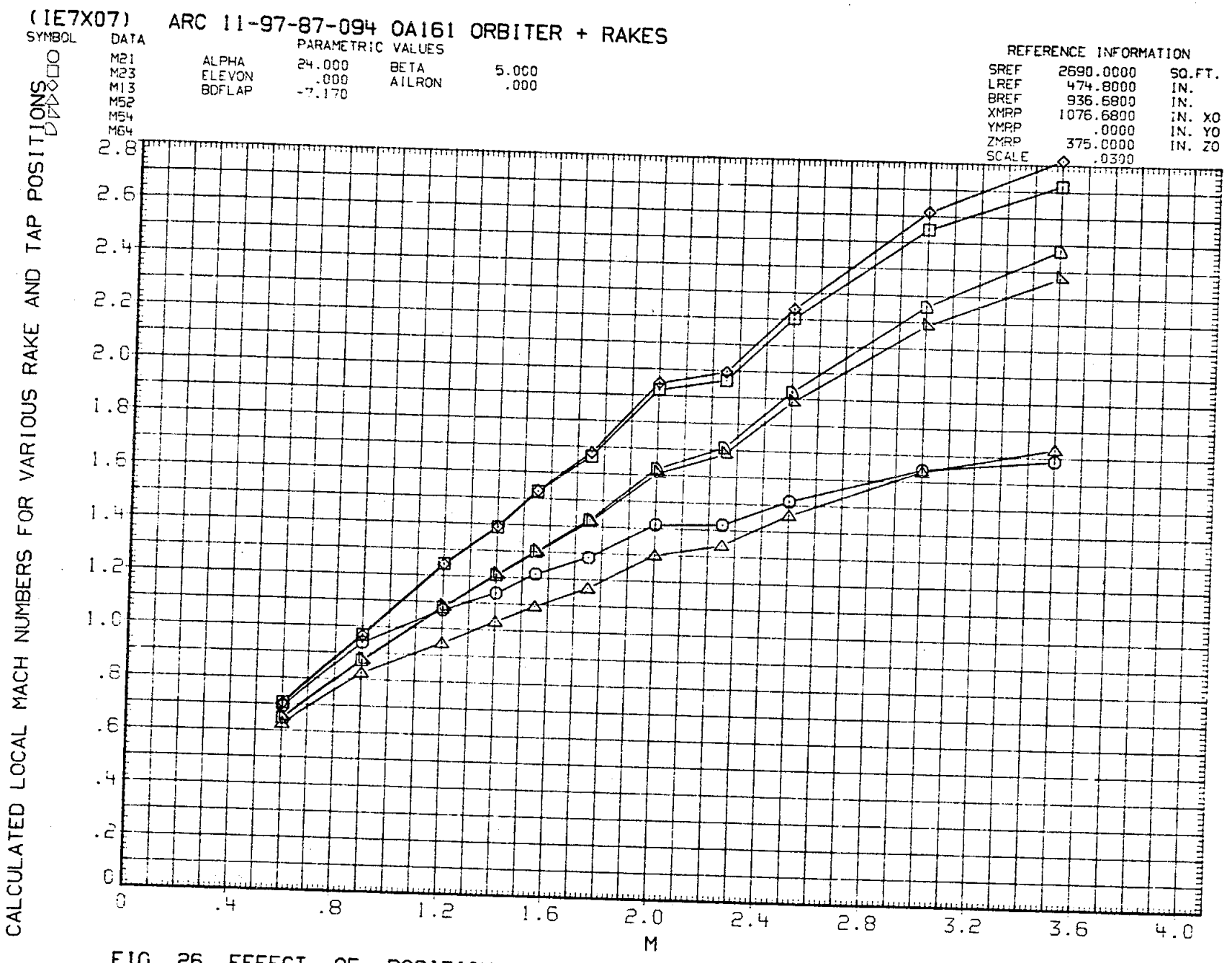


FIG. 26 EFFECT OF POSITION ON CALCULATED LOCAL MACH NUMBER BOTH RAKES

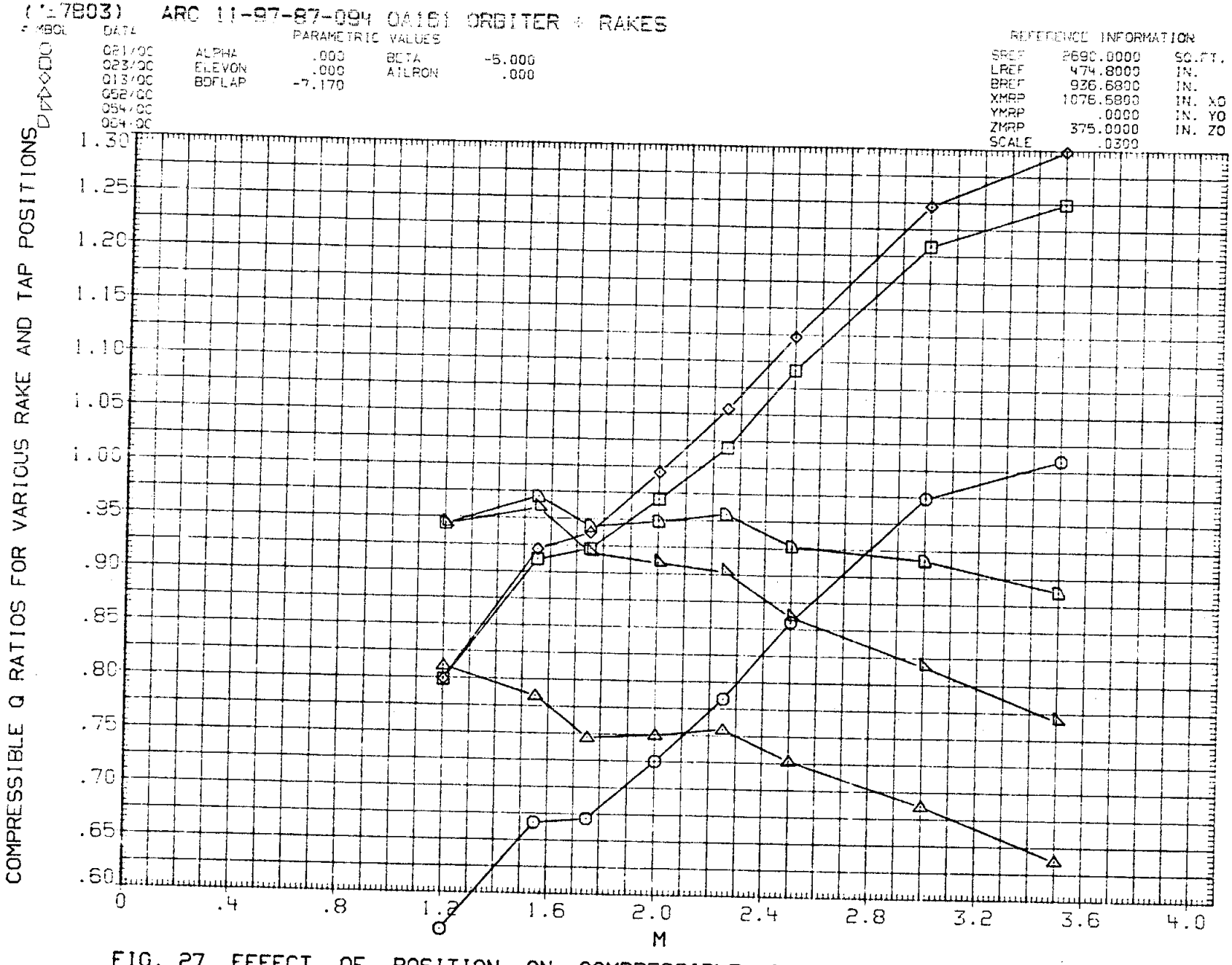


FIG. 27 EFFECT OF POSITION ON COMPRESSIBLE Q RATIO QIJ/QC BOTH RAKES

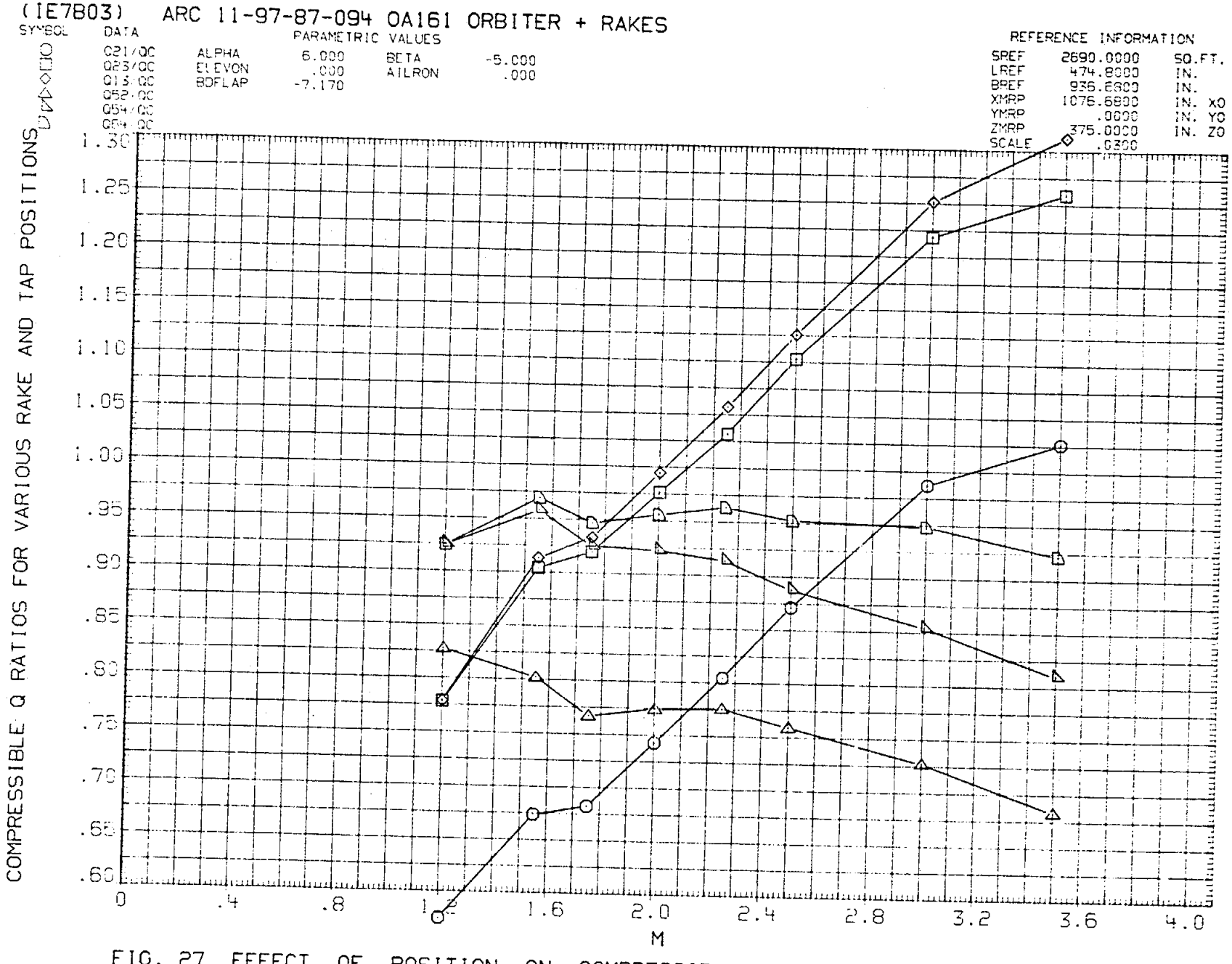


FIG. 27 EFFECT OF POSITION ON COMPRESSIBLE Q RATIO QIJ/QC BOTH RAKES

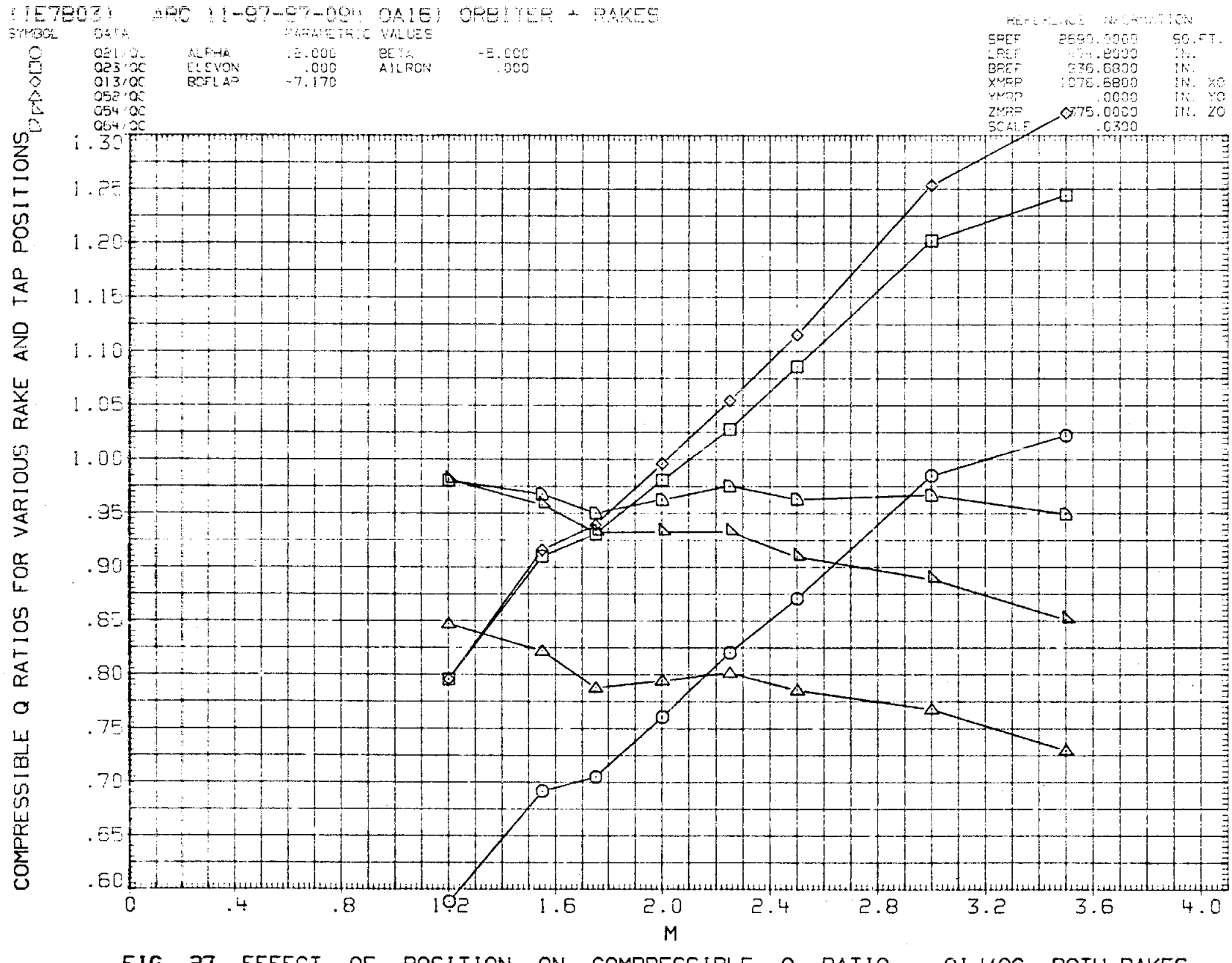


FIG. 27 EFFECT OF POSITION ON COMPRESSIBLE Q RATIO QIJ/QC BOTH RAKES

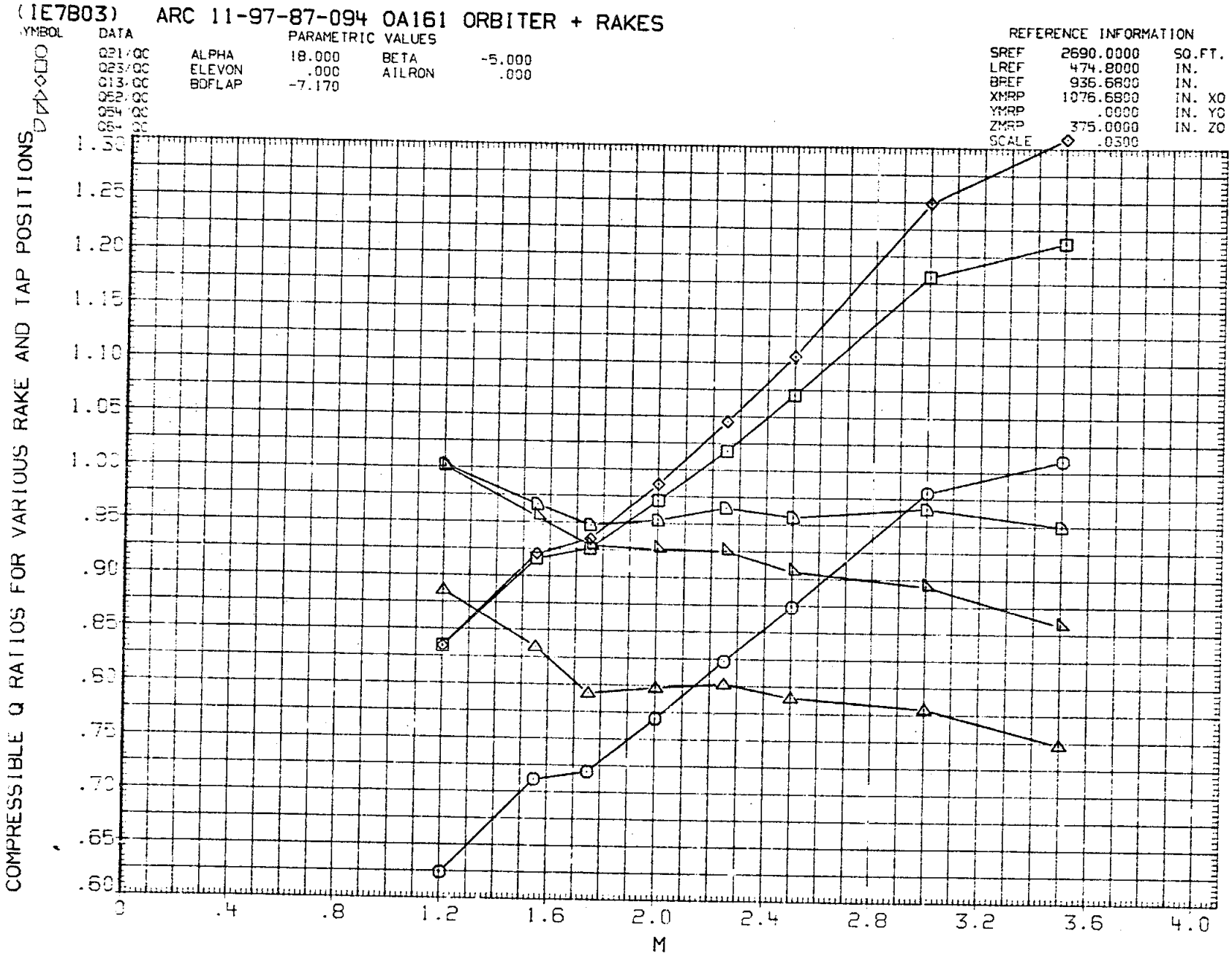


FIG. 27 EFFECT OF POSITION ON COMPRESSIBLE Q RATIO QIJ/QC BOTH RAKES

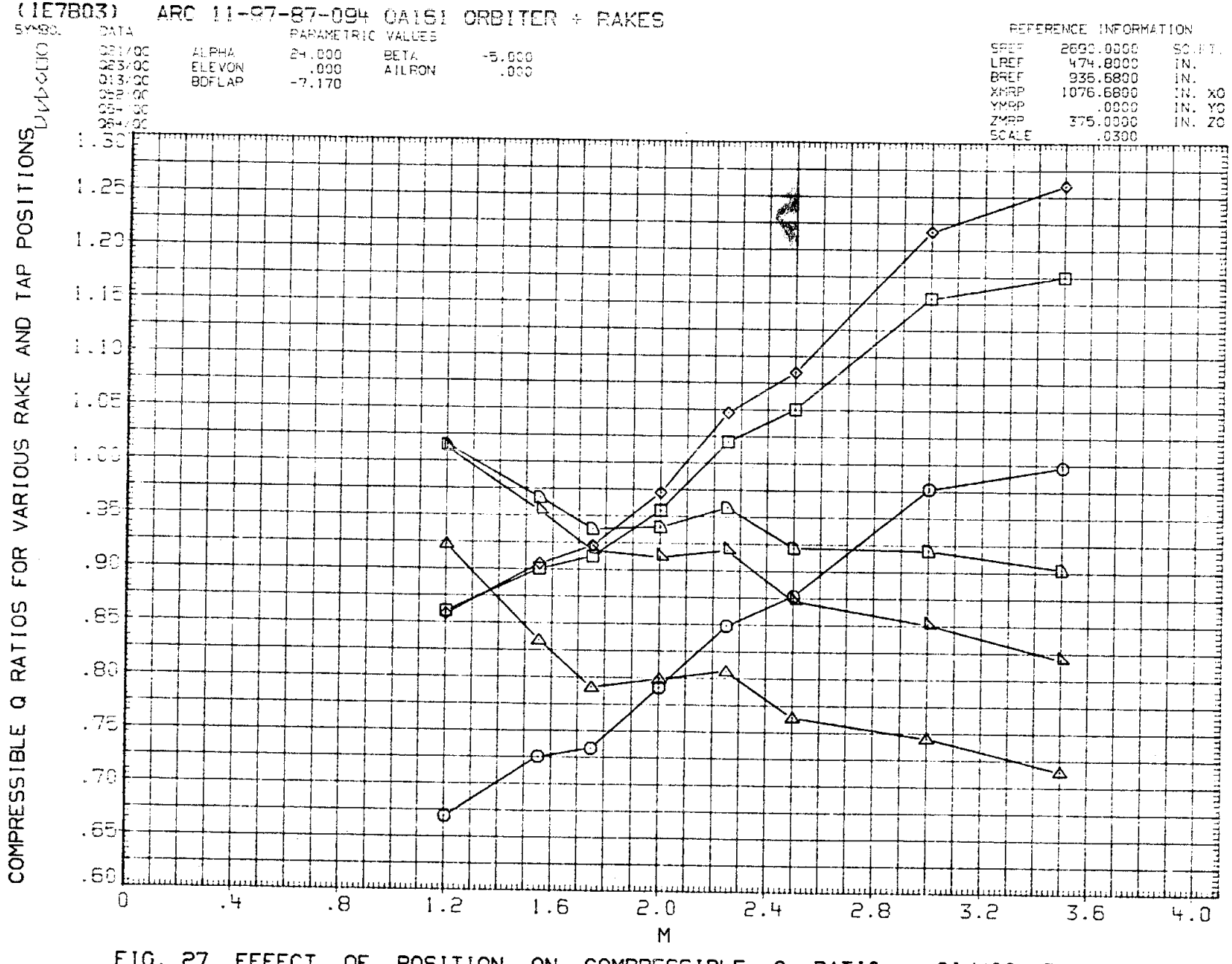


FIG. 27 EFFECT OF POSITION ON COMPRESSIBLE Q RATIO QIJ/QC BOTH RAKES

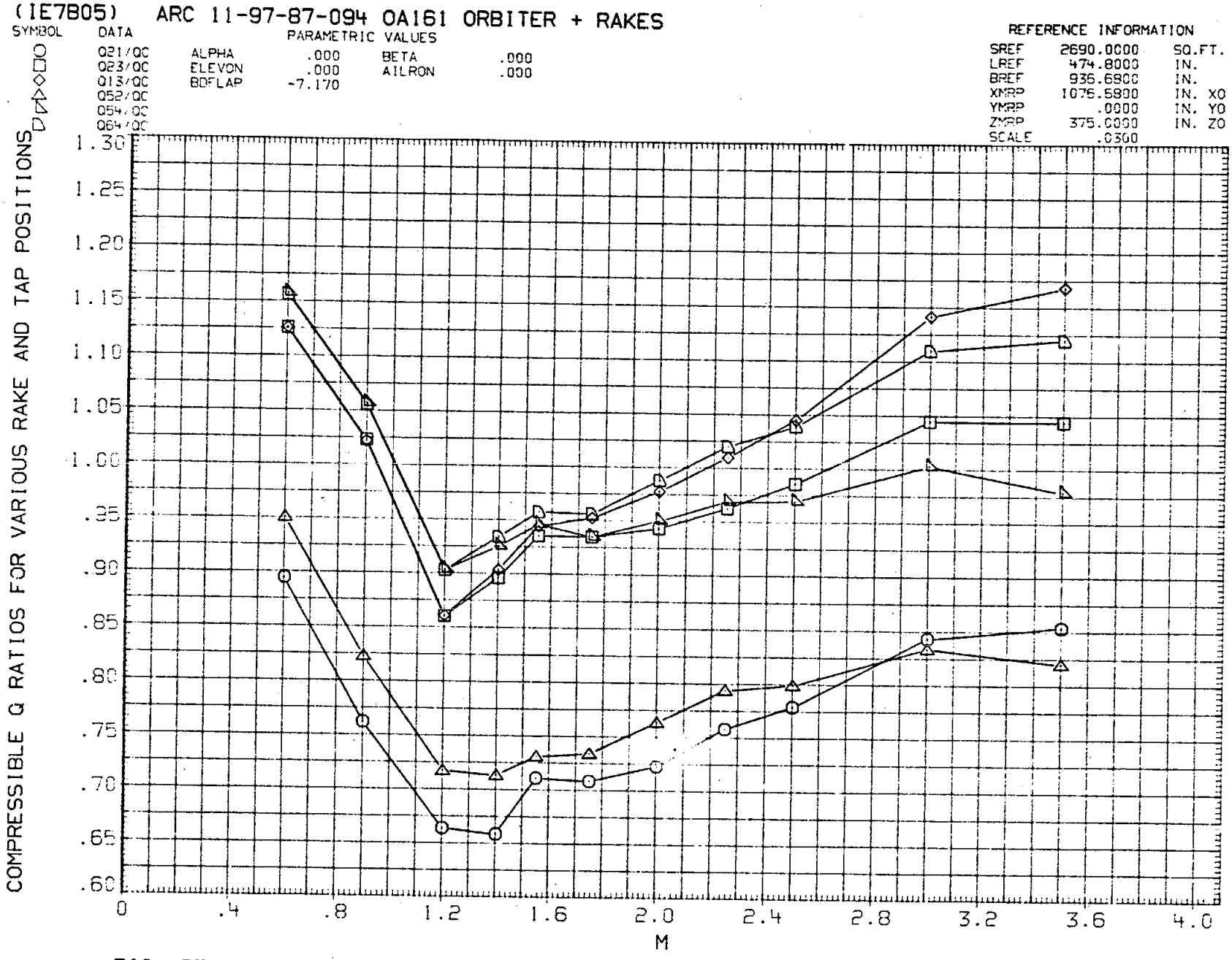


FIG. 27 EFFECT OF POSITION ON COMPRESSIBLE Q RATIO QIJ/QC BOTH RAKES

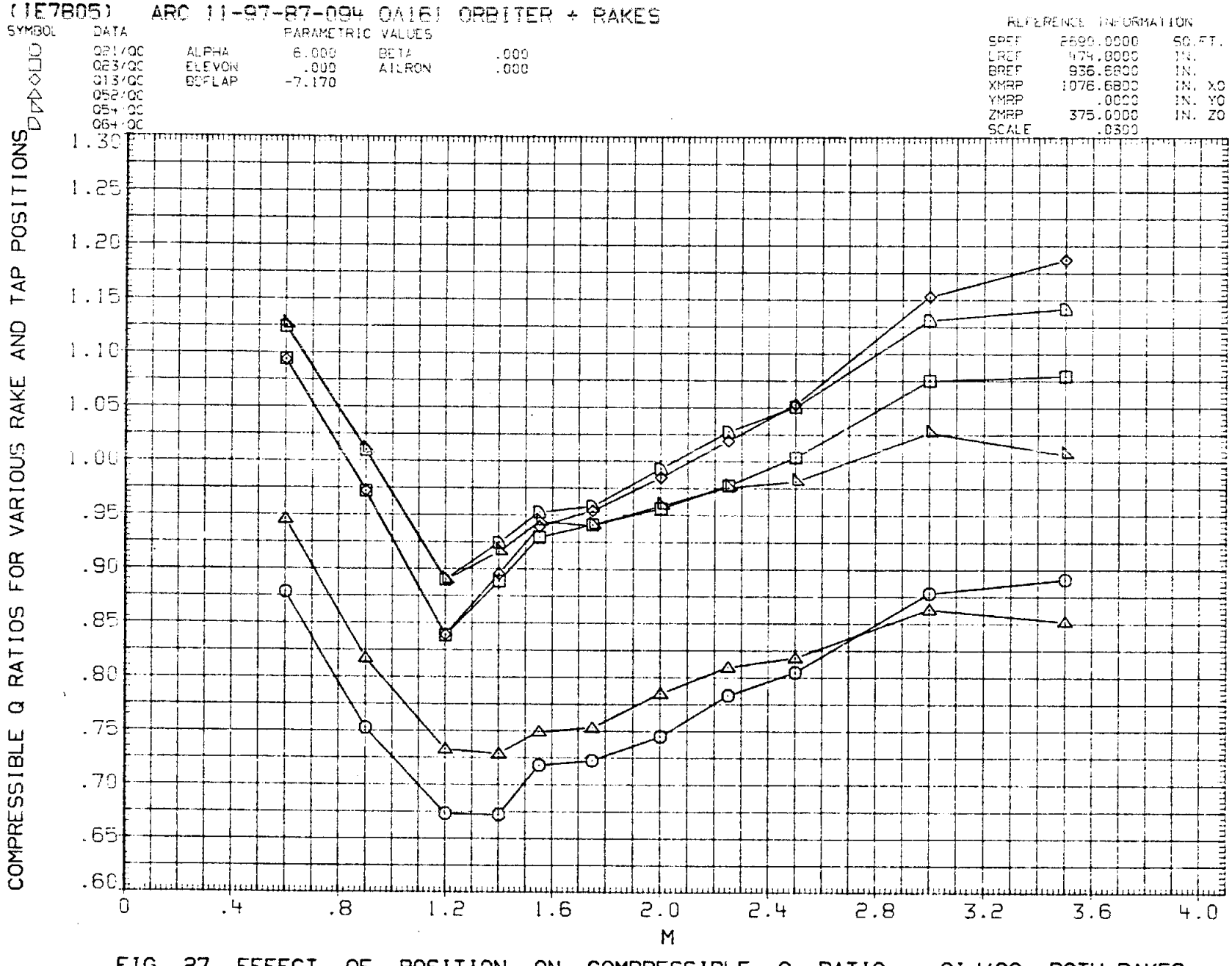


FIG. 27 EFFECT OF POSITION ON COMPRESSIBLE Q RATIO QIJ/QC BOTH RAKES

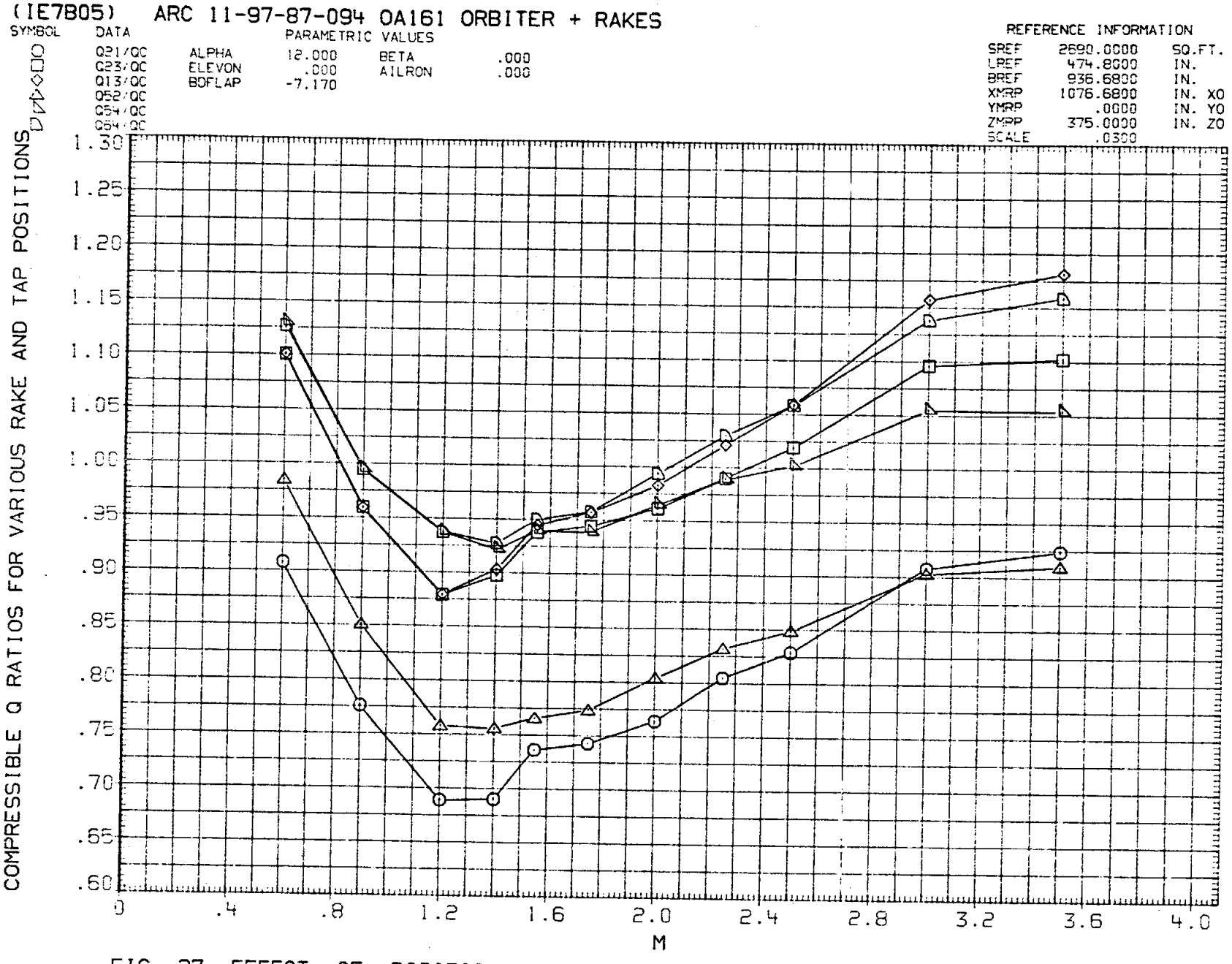


FIG. 27 EFFECT OF POSITION ON COMPRESSIBLE Q RATIO QIJ/QC BOTH RAKES

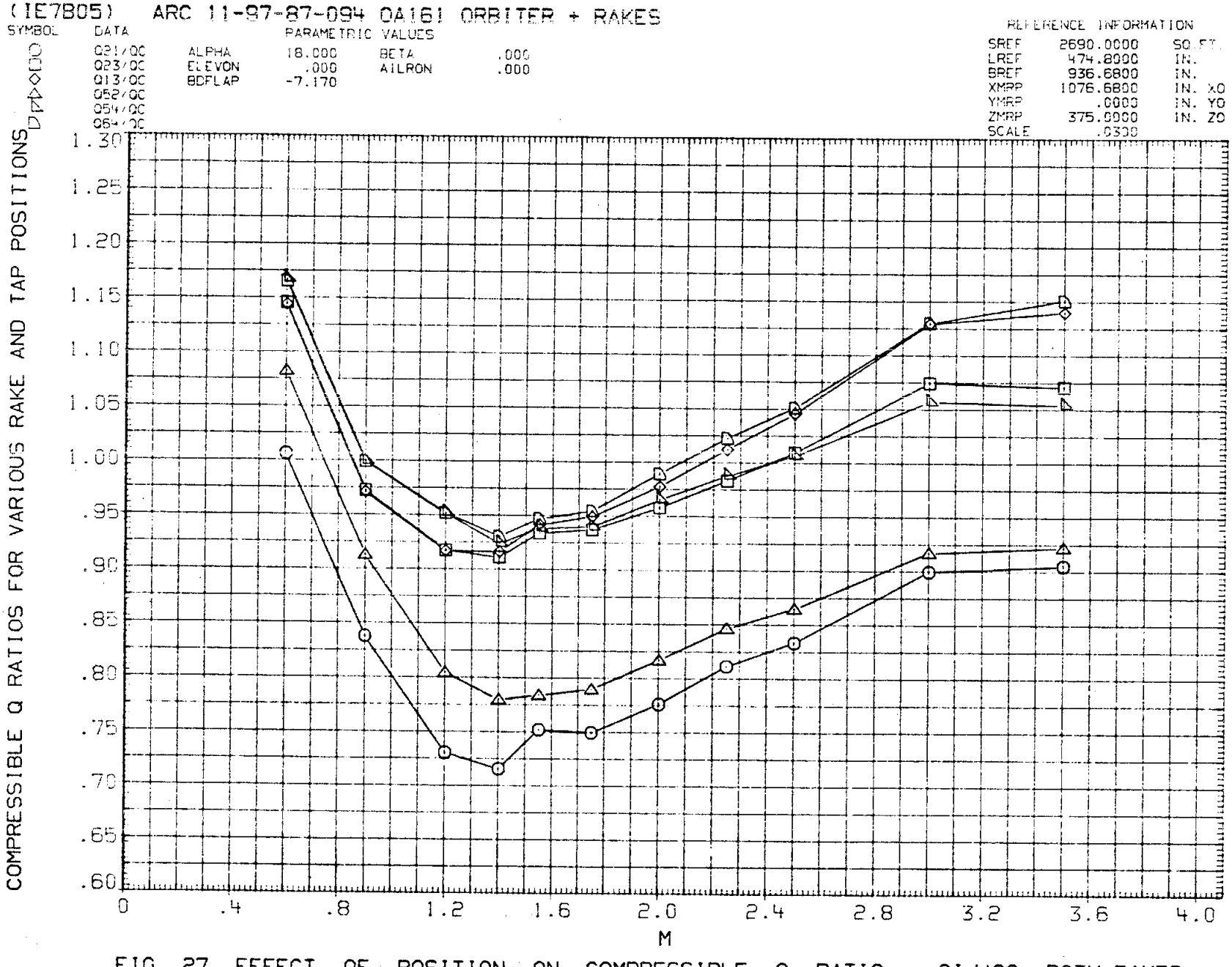


FIG. 27 EFFECT OF POSITION ON COMPRESSIBLE Q RATIO QIJ/QC BOTH RAKES

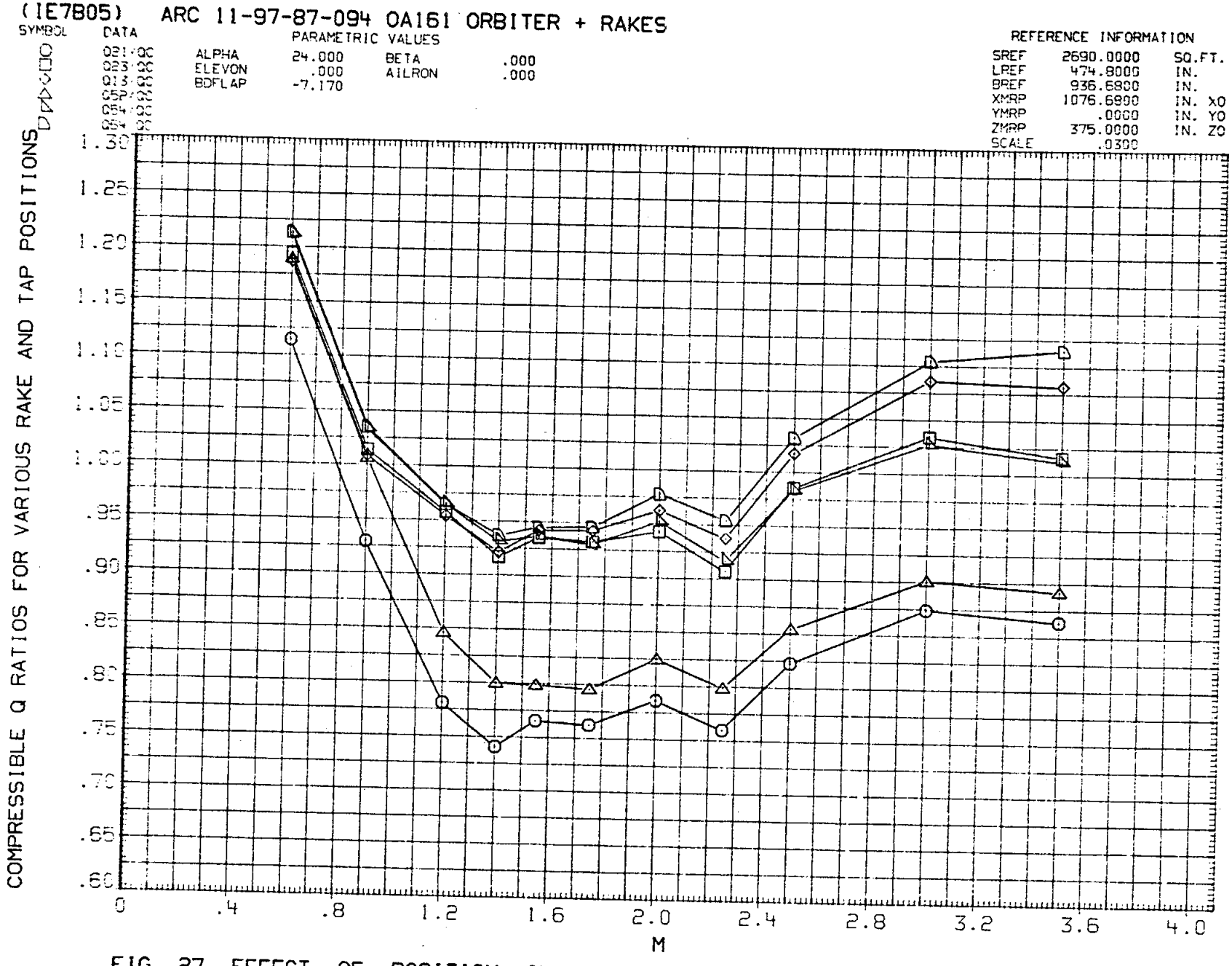


FIG. 27 EFFECT OF POSITION ON COMPRESSIBLE Q RATIO QIJ/QC BOTH RAKES

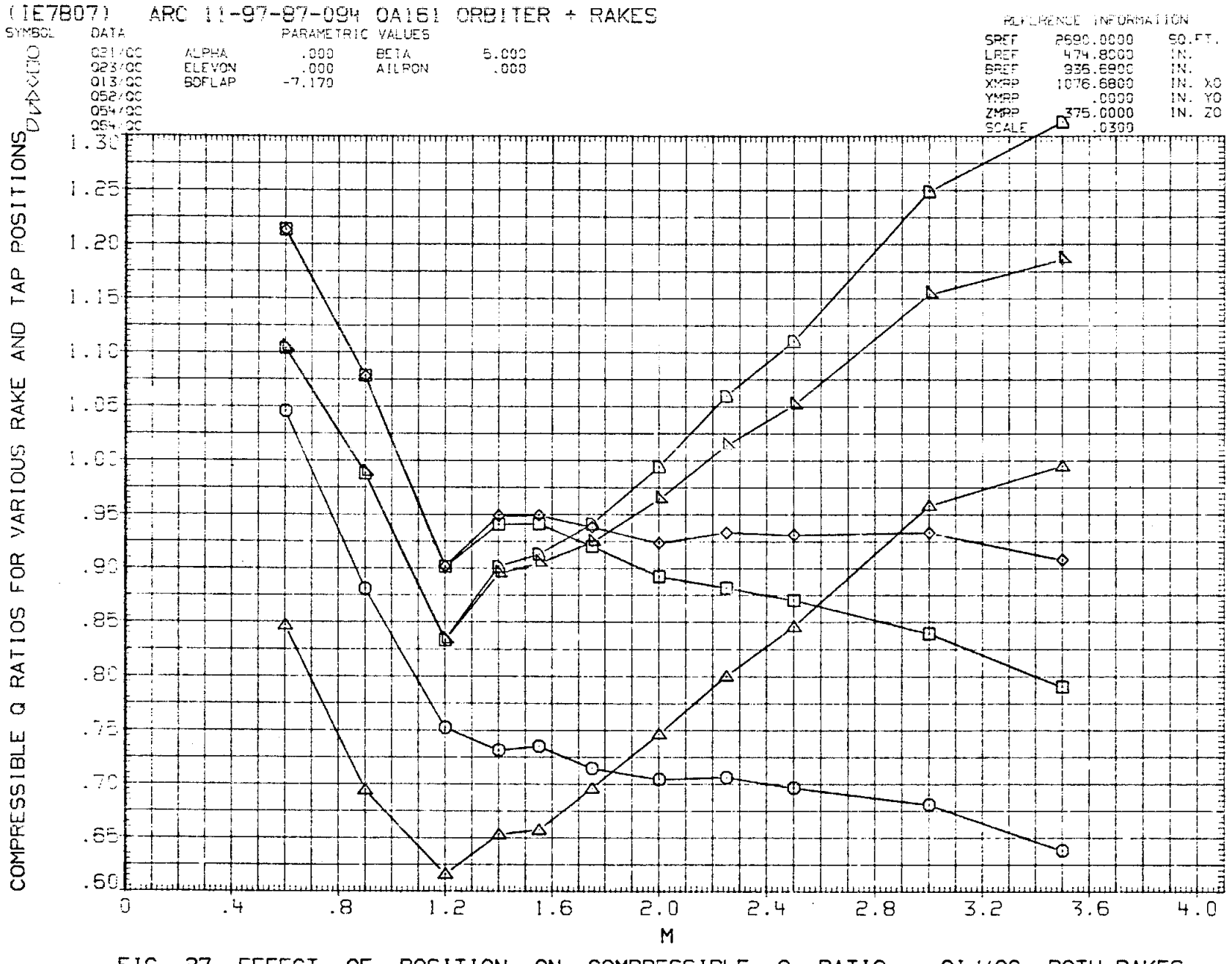


FIG. 27 EFFECT OF POSITION ON COMPRESSIBLE Q RATIO QIJ/QC BOTH RAKES

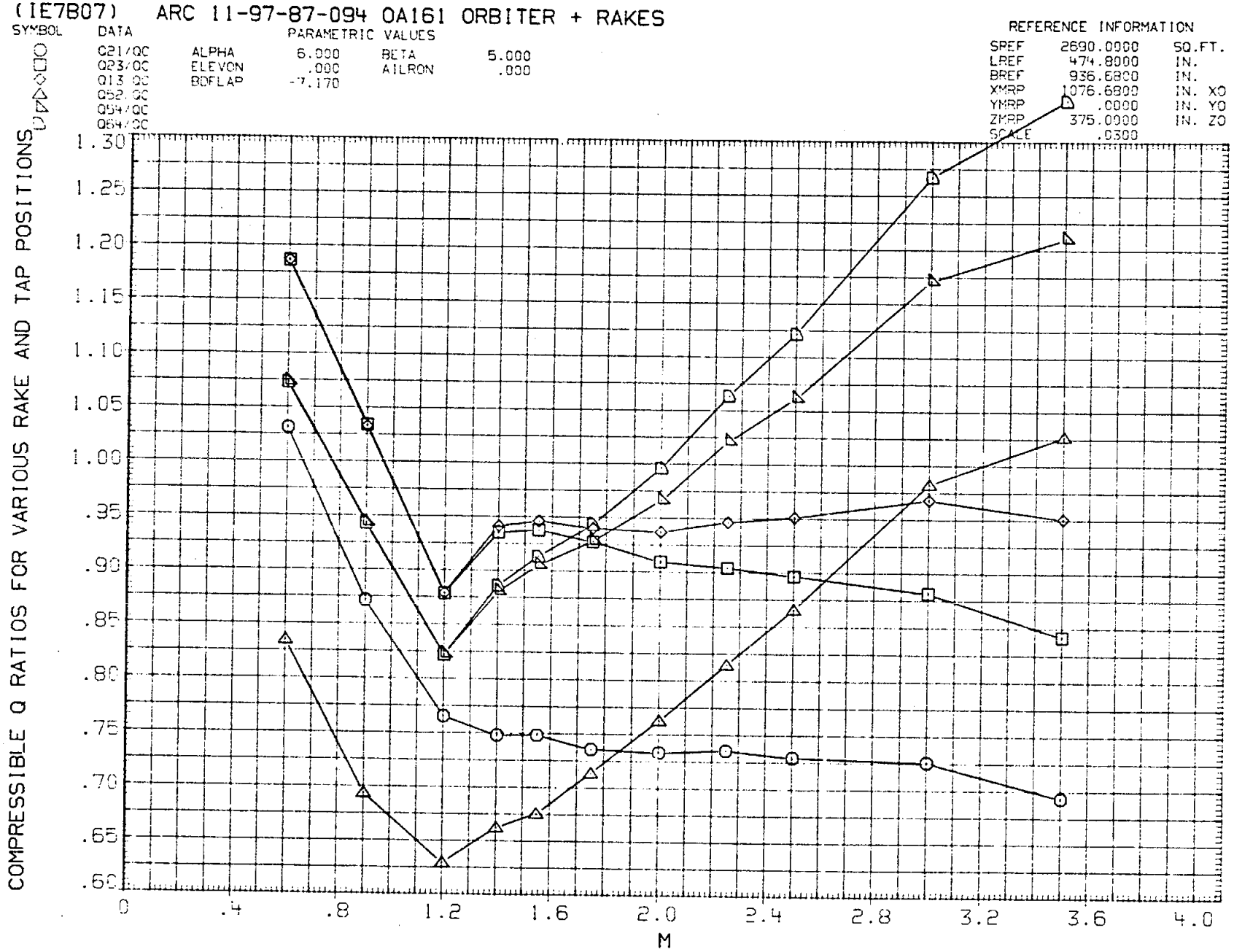


FIG. 27 EFFECT OF POSITION ON COMPRESSIBLE Q RATIO QIJ/QC BOTH RAKES

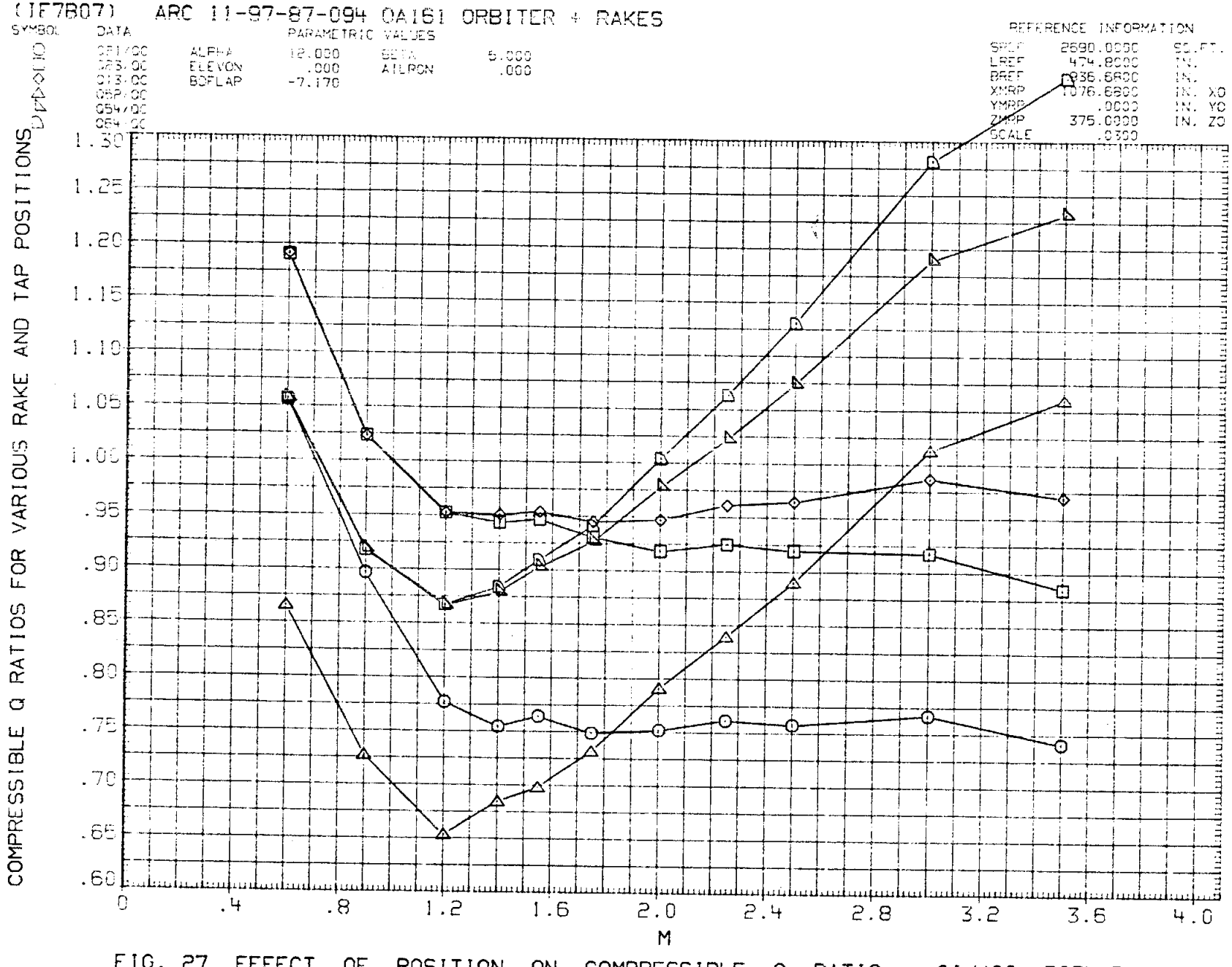


FIG. 27 EFFECT OF POSITION ON COMPRESSIBLE Q RATIO QIJ/QC BOTH RAKES

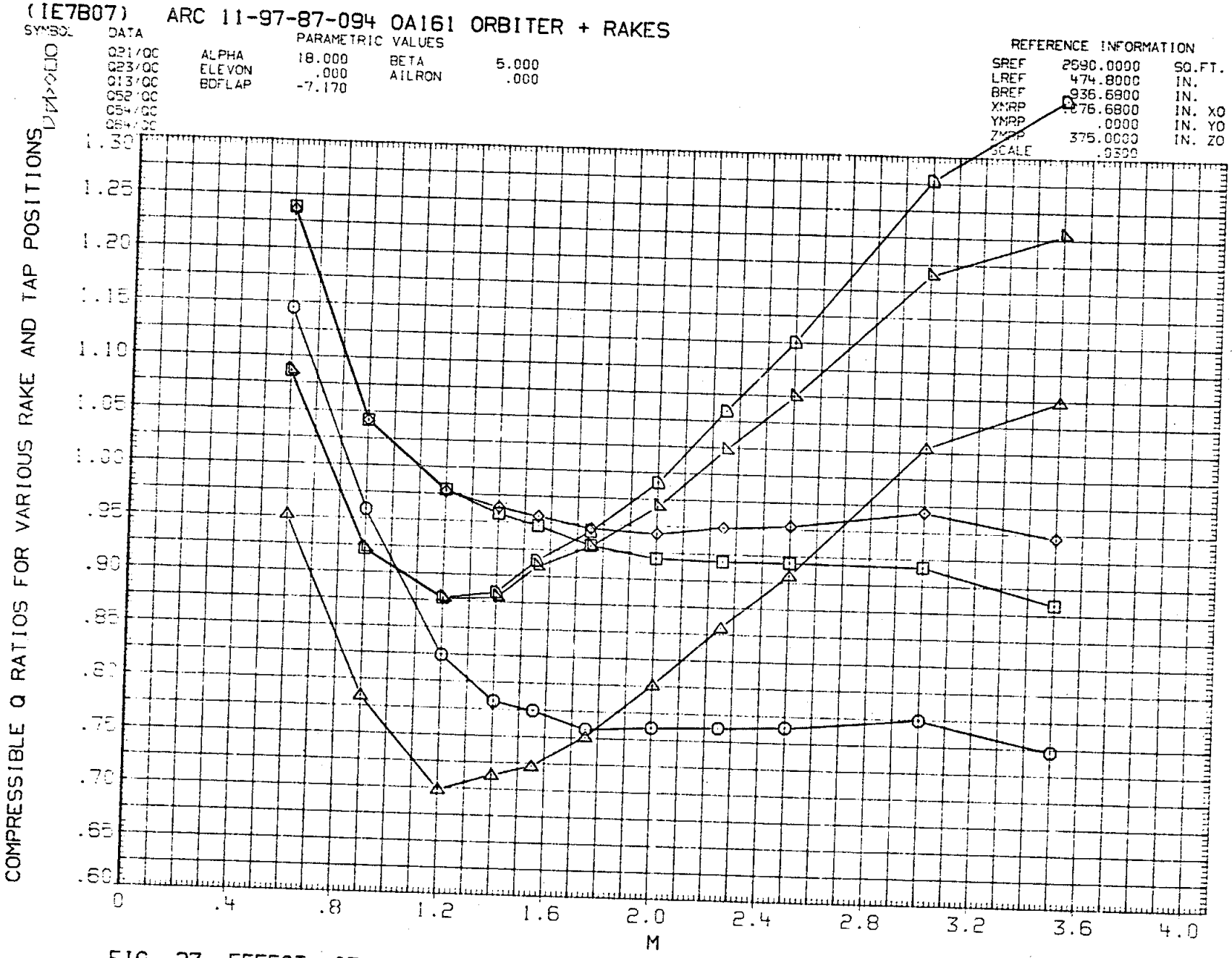


FIG. 27 EFFECT OF POSITION ON COMPRESSIBLE Q RATIO QIJ/QC BOTH RAKES

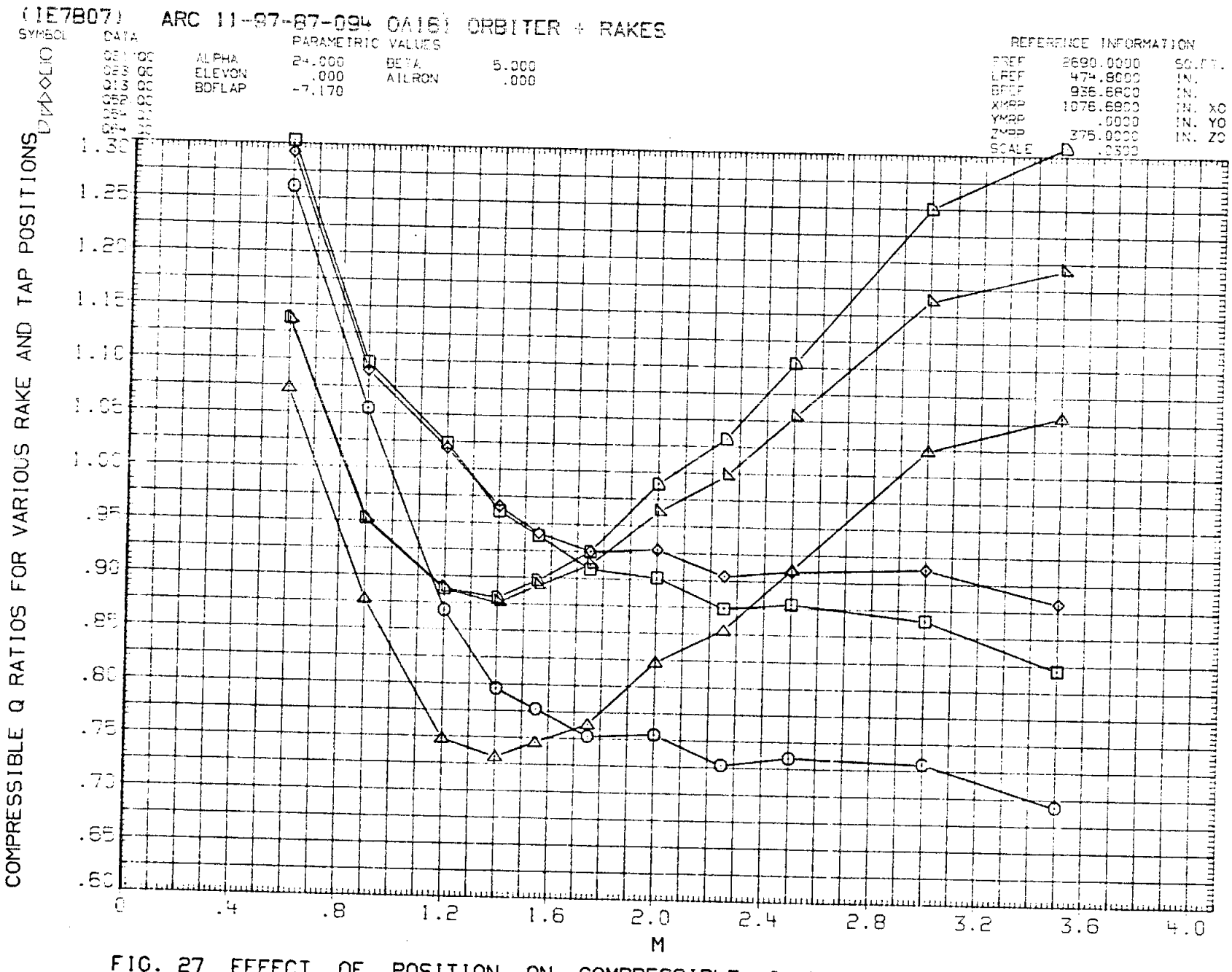


FIG. 27 EFFECT OF POSITION ON COMPRESSIBLE Q RATIO QIJ/QC BOTH RAKES

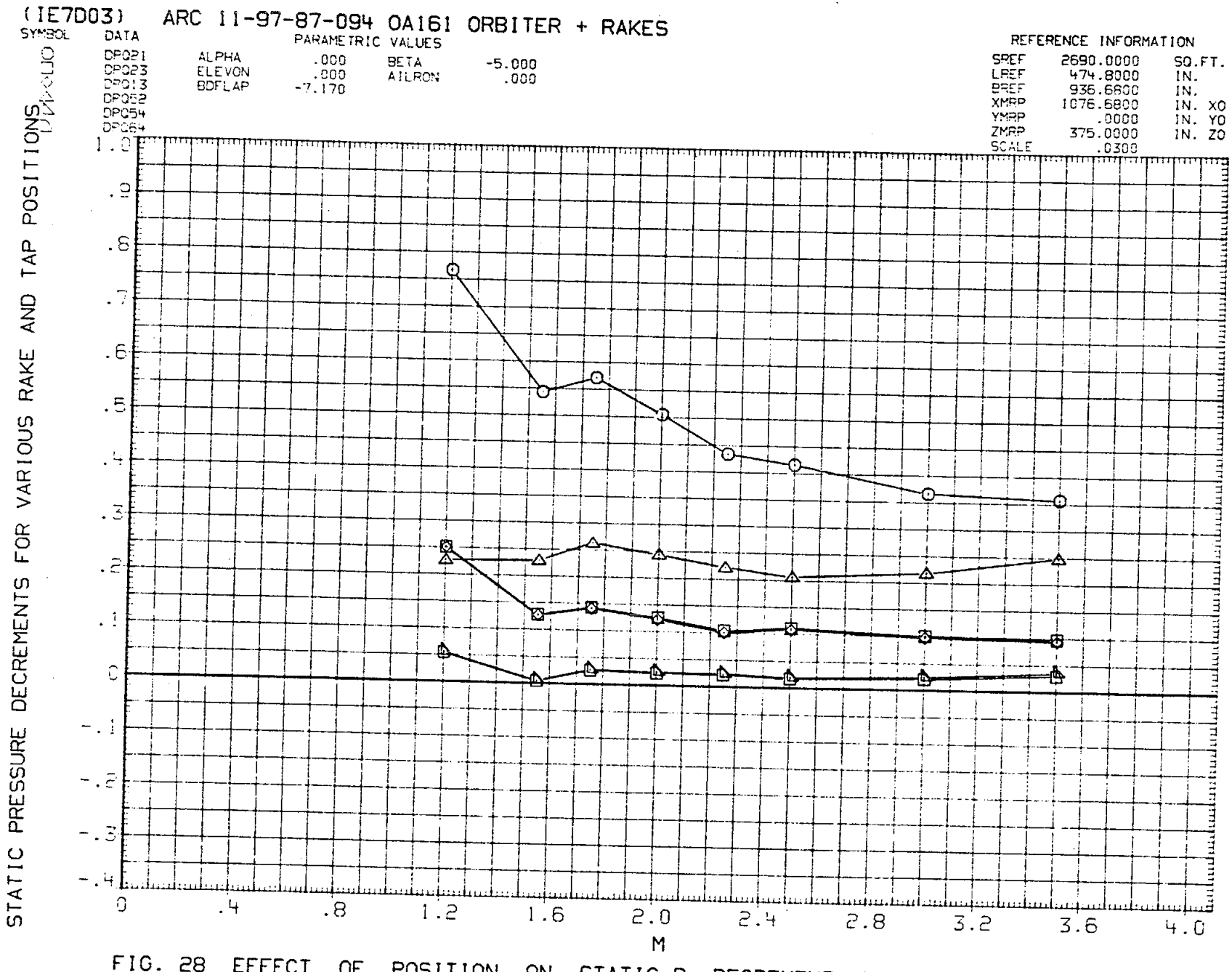


FIG. 28 EFFECT OF POSITION ON STATIC P. DECREMENT PSJ-P /QIJ BOTH RAKES

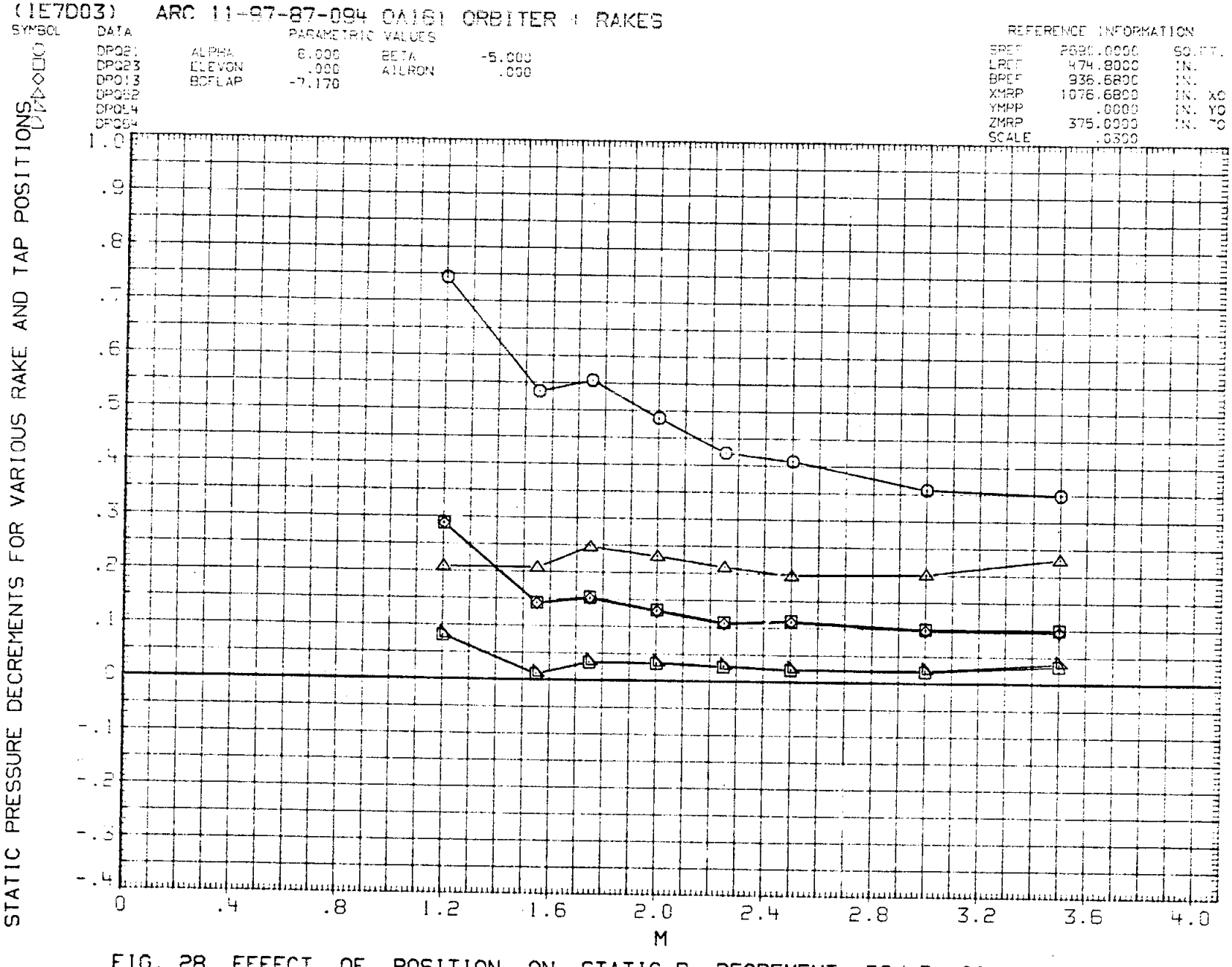


FIG. 28 EFFECT OF POSITION ON STATIC P. DECREMENT PSJ-P /QIJ BOTH RAKES

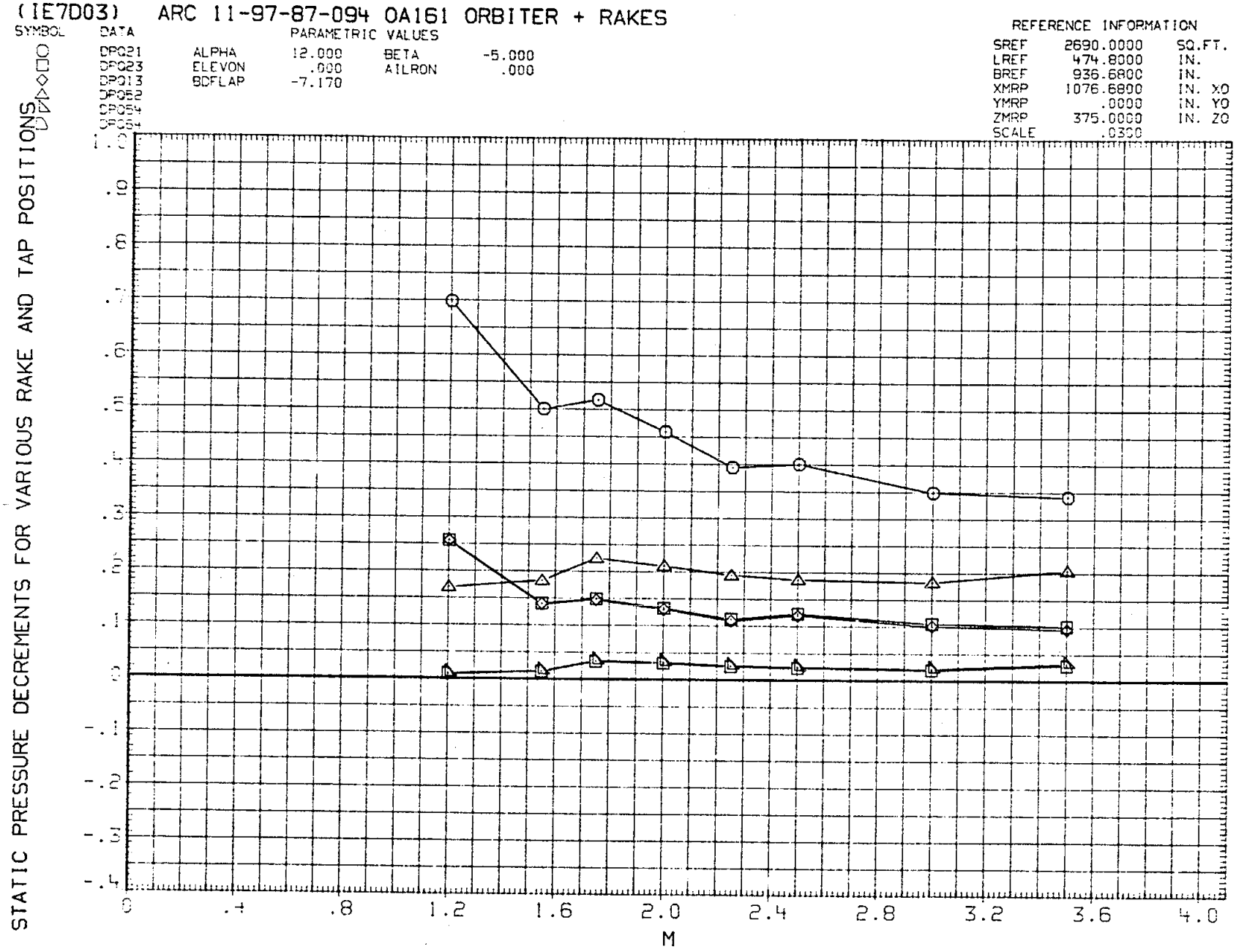


FIG. 28 EFFECT OF POSITION ON STATIC P. DECREMENT PSJ-P /QIJ BOTH RAKES

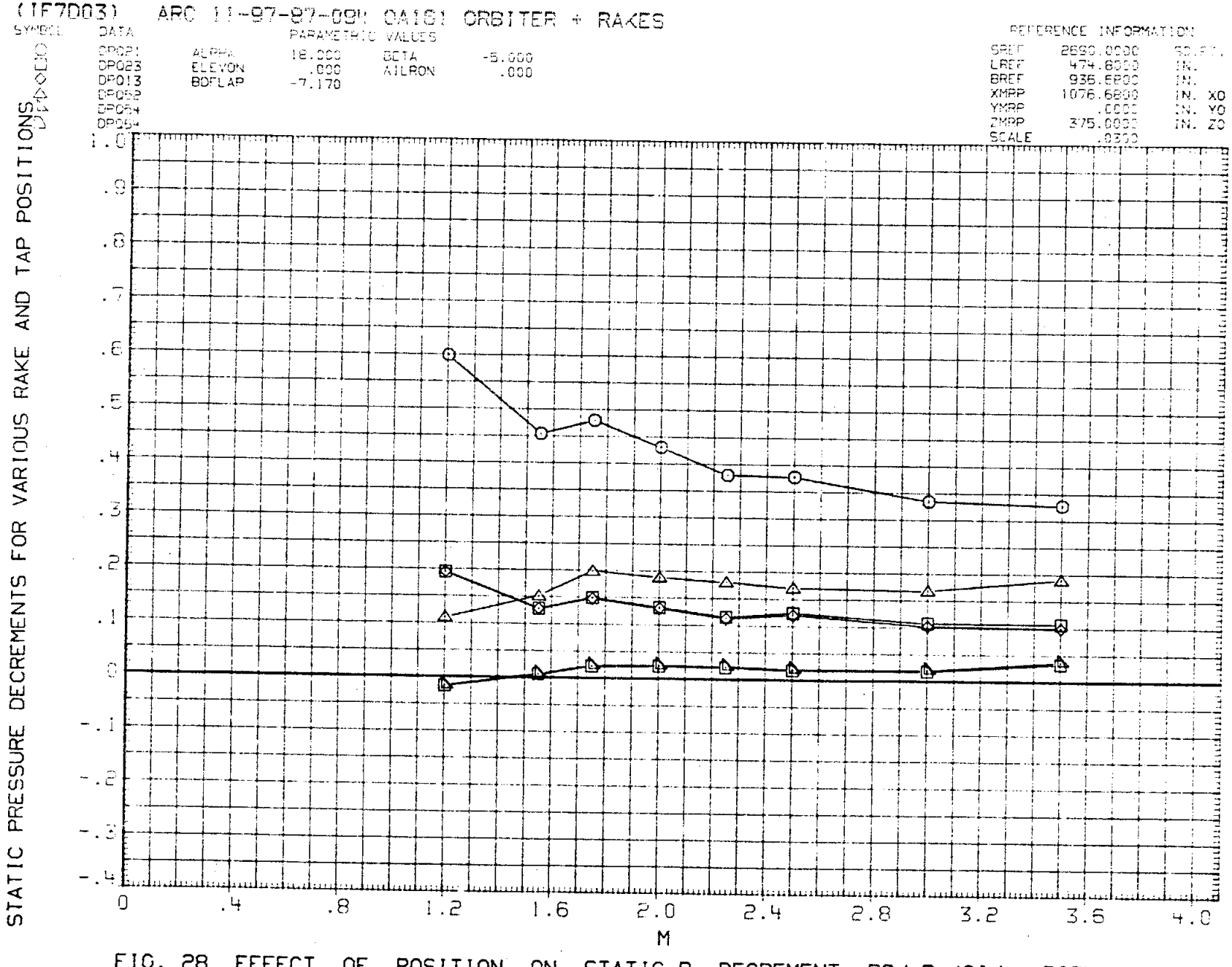


FIG. 28 EFFECT OF POSITION ON STATIC P. DECREMENT PSJ-P /QIJ BOTH RAKES

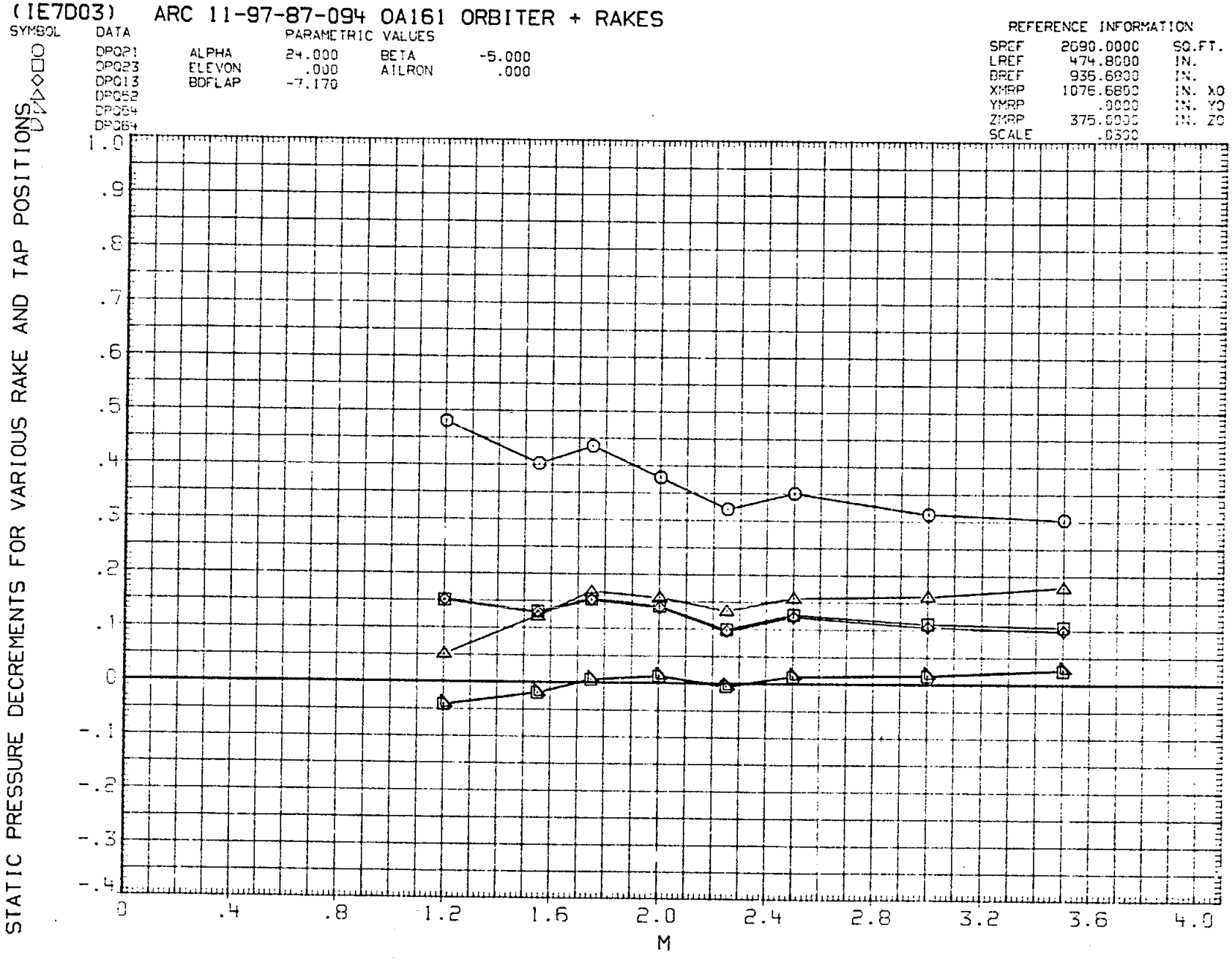


FIG. 28 EFFECT OF POSITION ON STATIC P. DECREMENT PSJ-P /QIJ BOTH RAKES



FIG. 28 EFFECT OF POSITION ON STATIC P. DECREMENT PSJ-P /QIJ BOTH RAKES

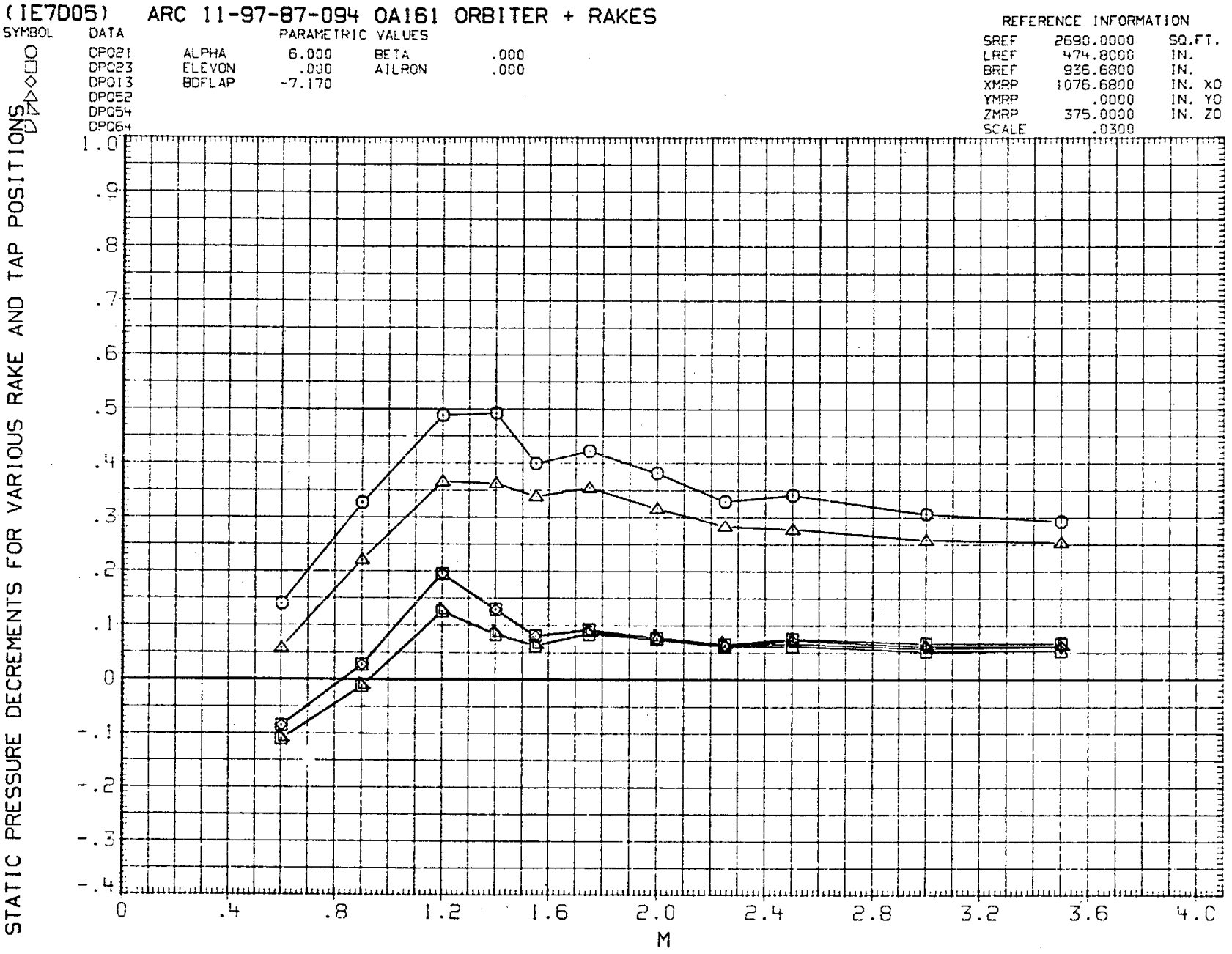


FIG. 28 EFFECT OF POSITION ON STATIC P. DECREMENT PSJ-P /QIJ BOTH RAKES

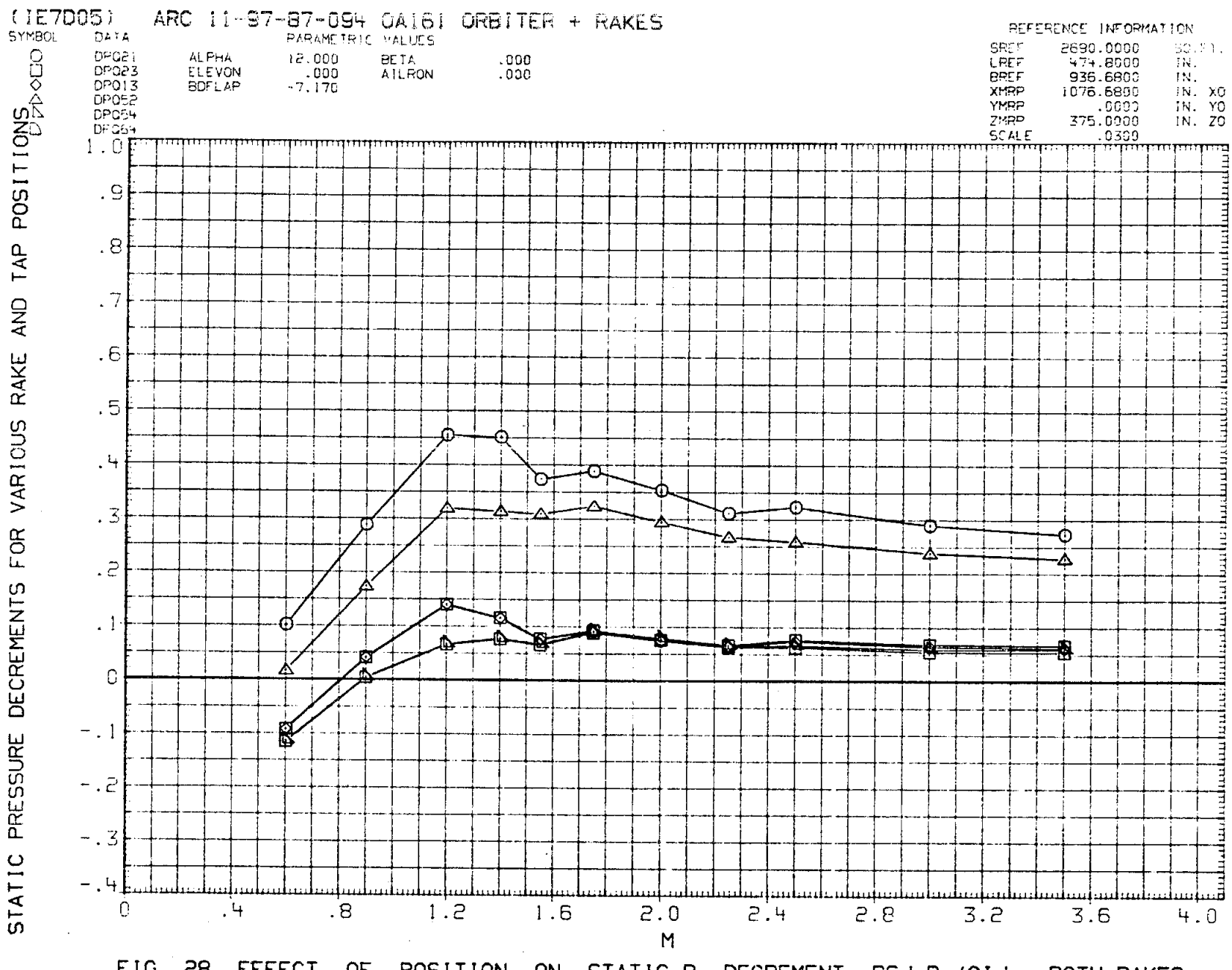


FIG. 28 EFFECT OF POSITION ON STATIC P. DECREMENT PSJ-P /QIJ BOTH RAKES

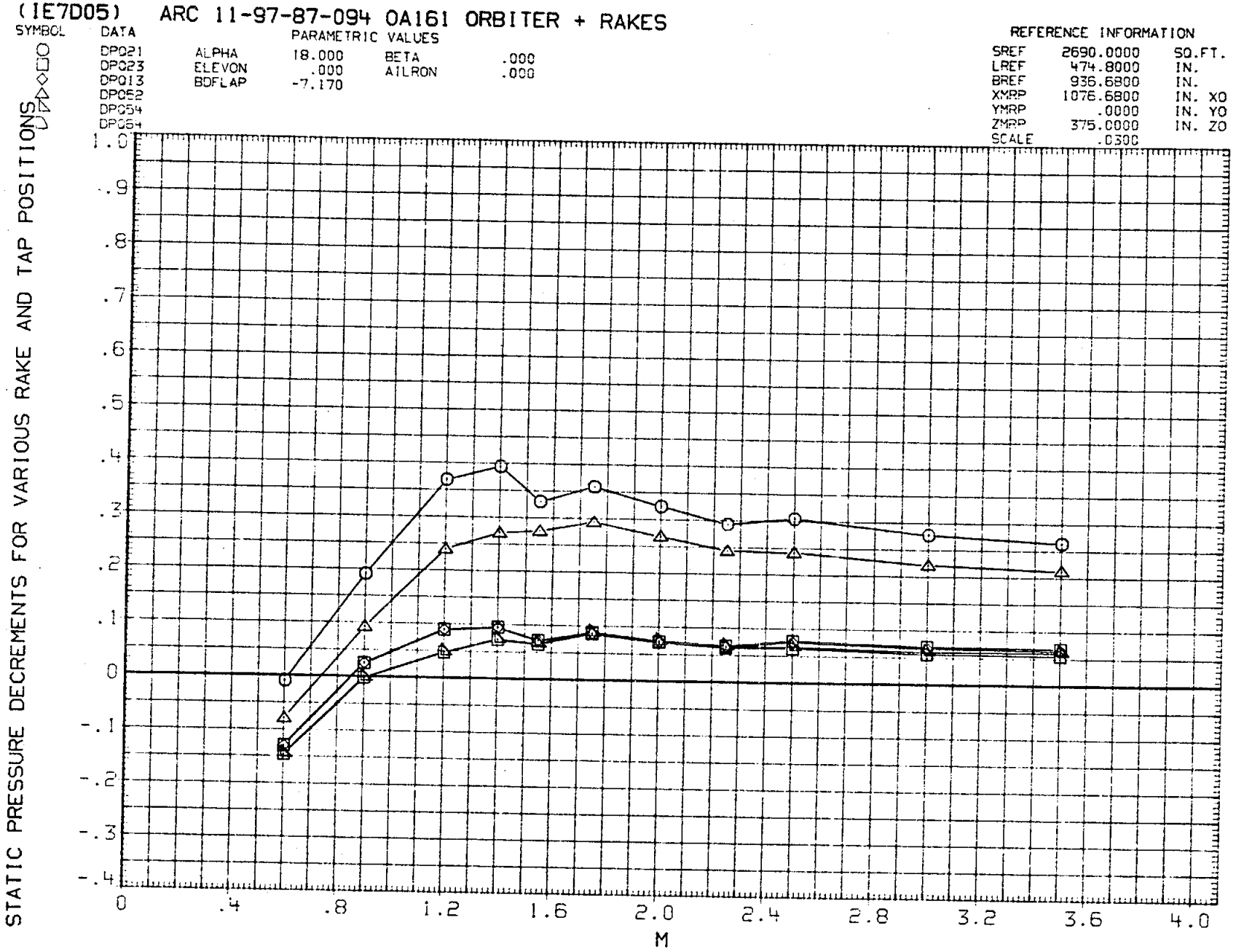


FIG. 28 EFFECT OF POSITION ON STATIC P. DECREMENT PSJ-P /QIJ BOTH RAKES

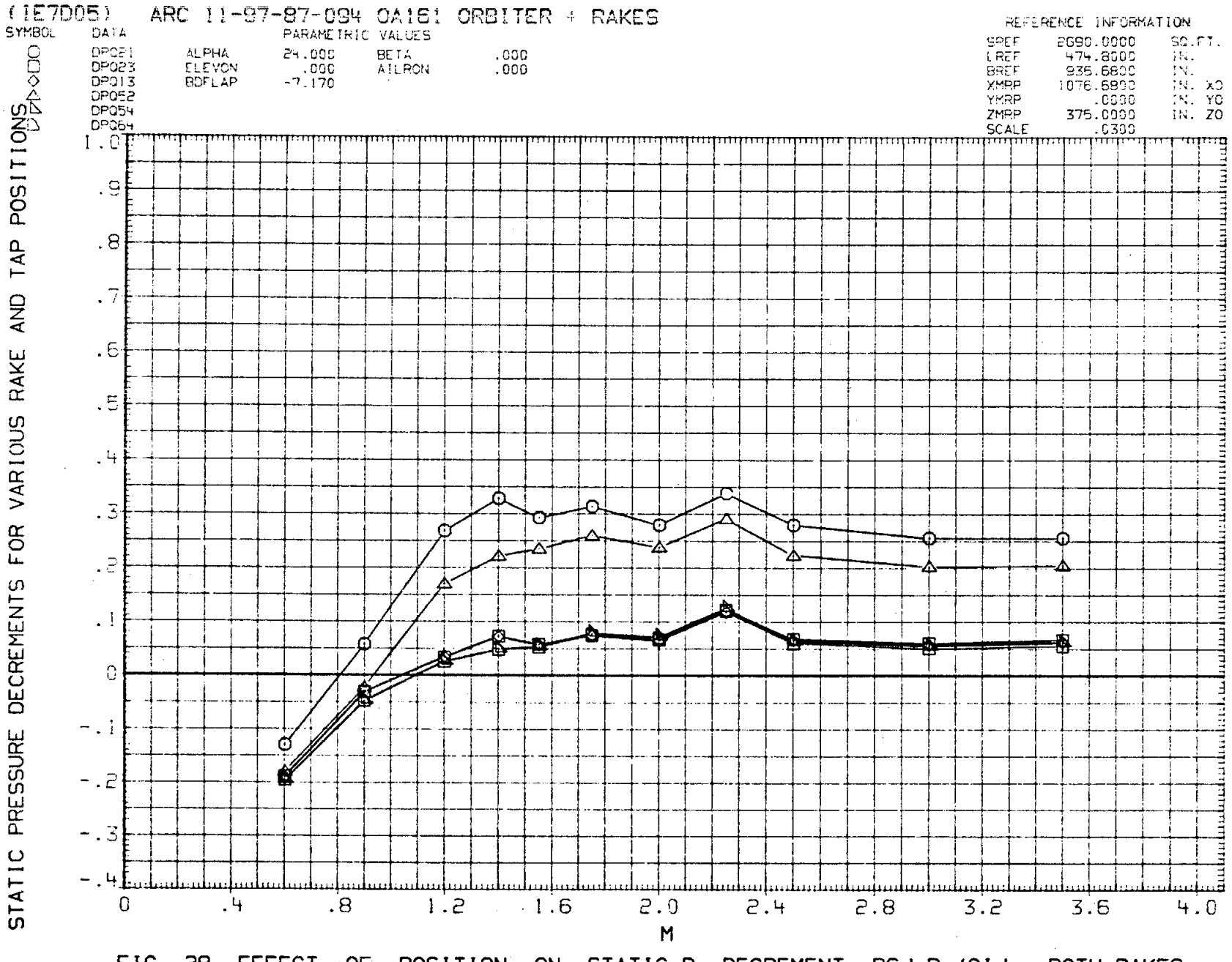


FIG. 28 EFFECT OF POSITION ON STATIC P. DECREMENT PSJ-P /QIJ BOTH RAKES

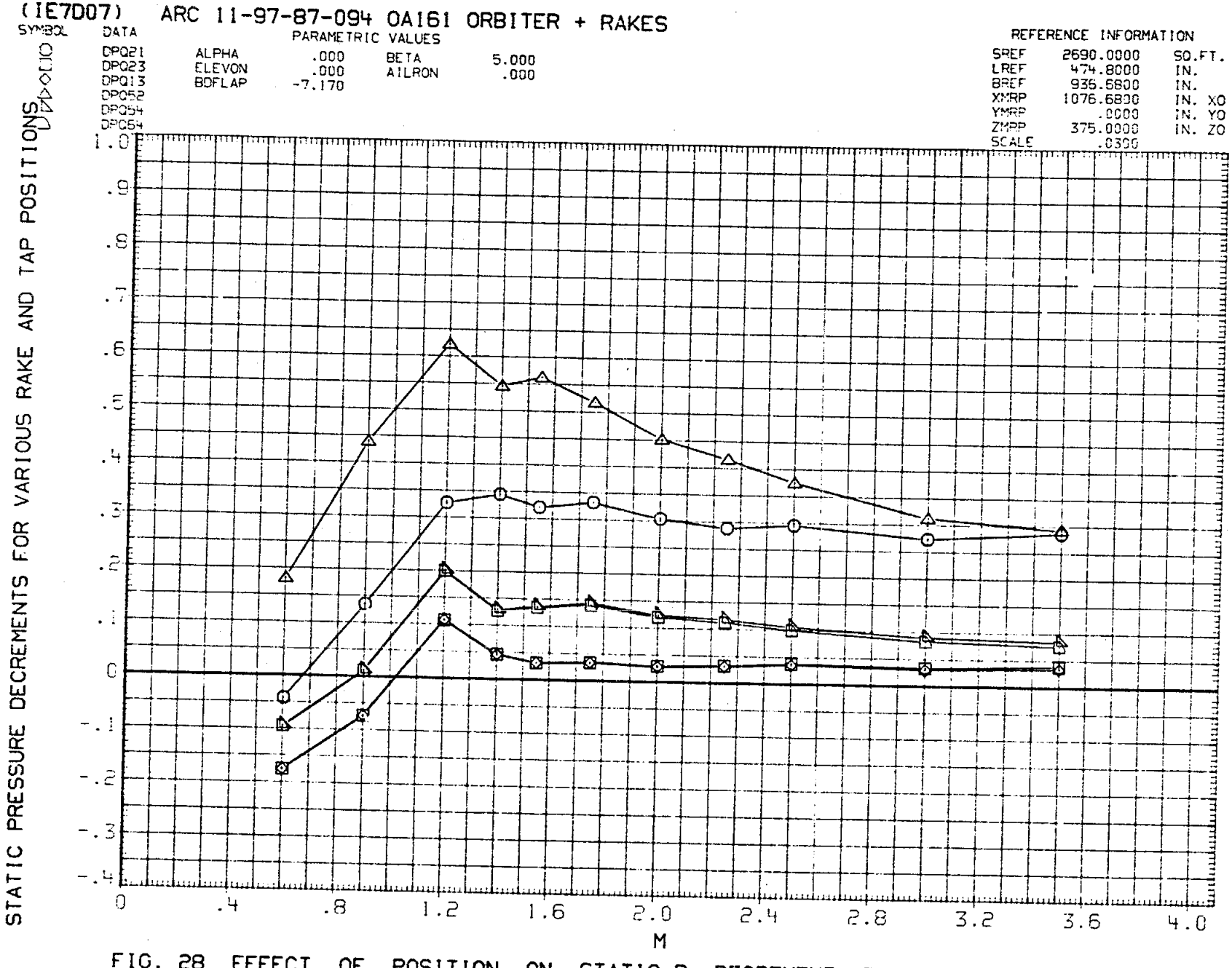


FIG. 28 EFFECT OF POSITION ON STATIC P. DECREMENT PSJ-P /QIJ BOTH RAKES

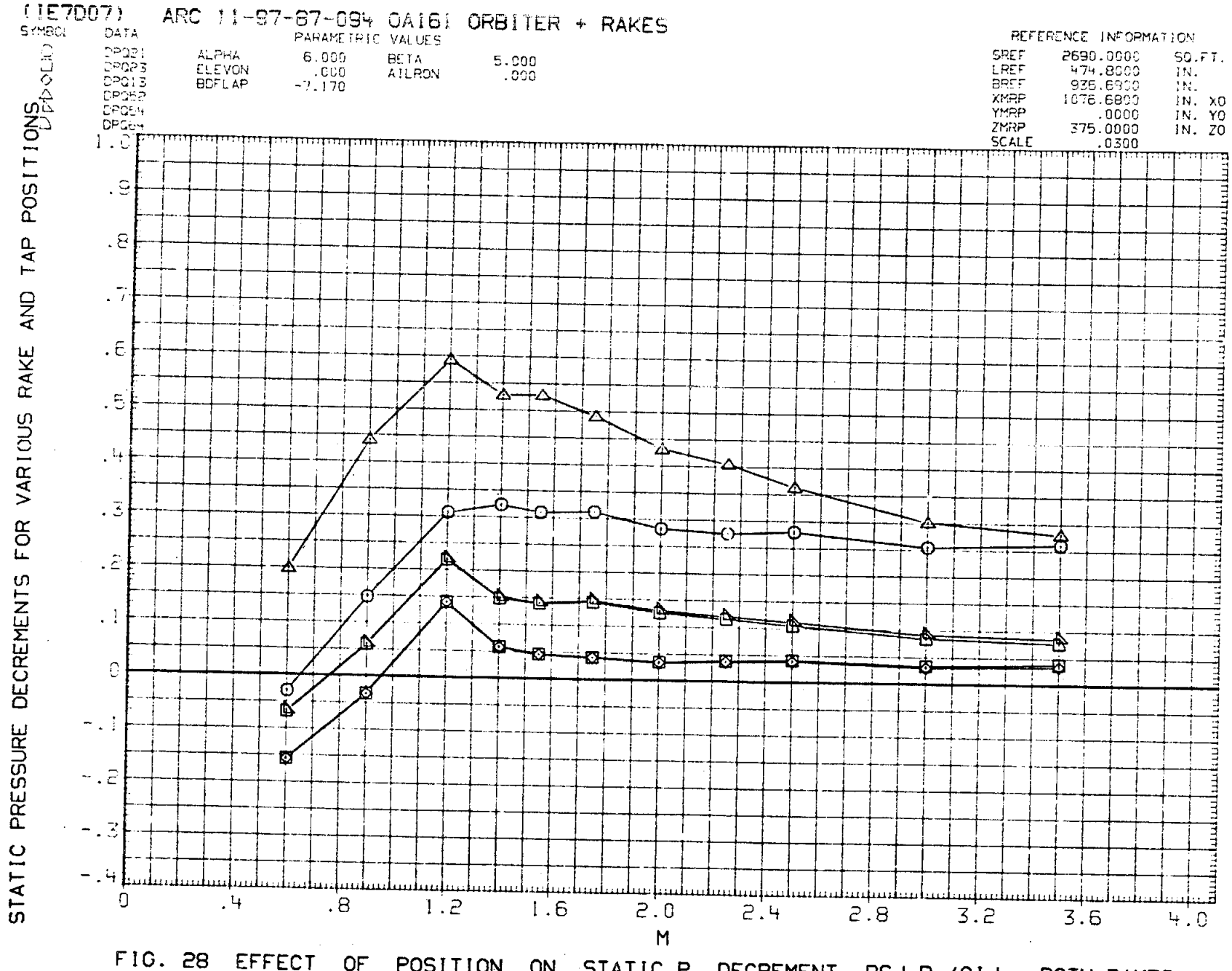


FIG. 28 EFFECT OF POSITION ON STATIC P. DECREMENT PSJ-P /QIJ BOTH RAKES

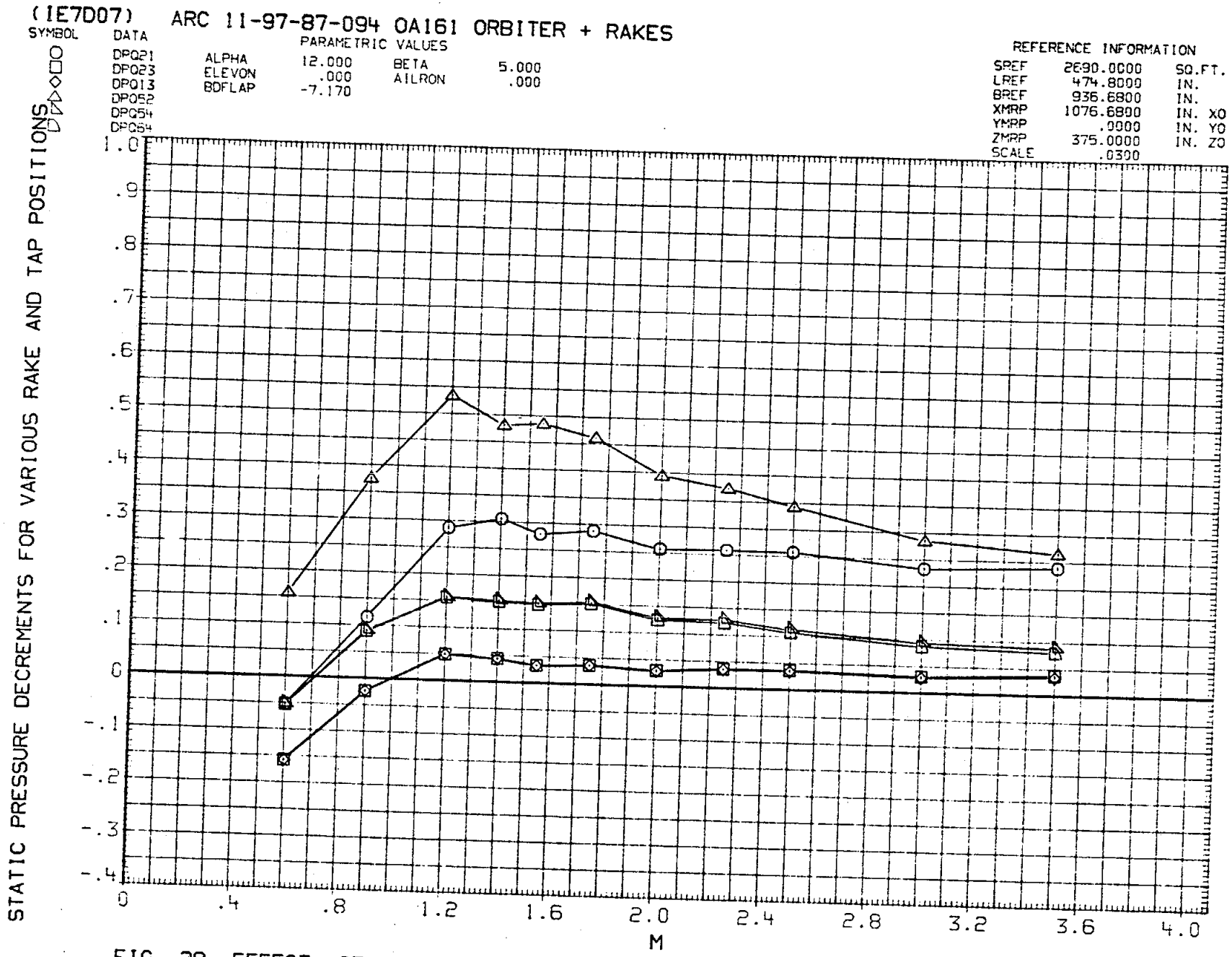


FIG. 28 EFFECT OF POSITION ON STATIC P. DECREMENT PSJ-P /QIJ BOTH RAKES

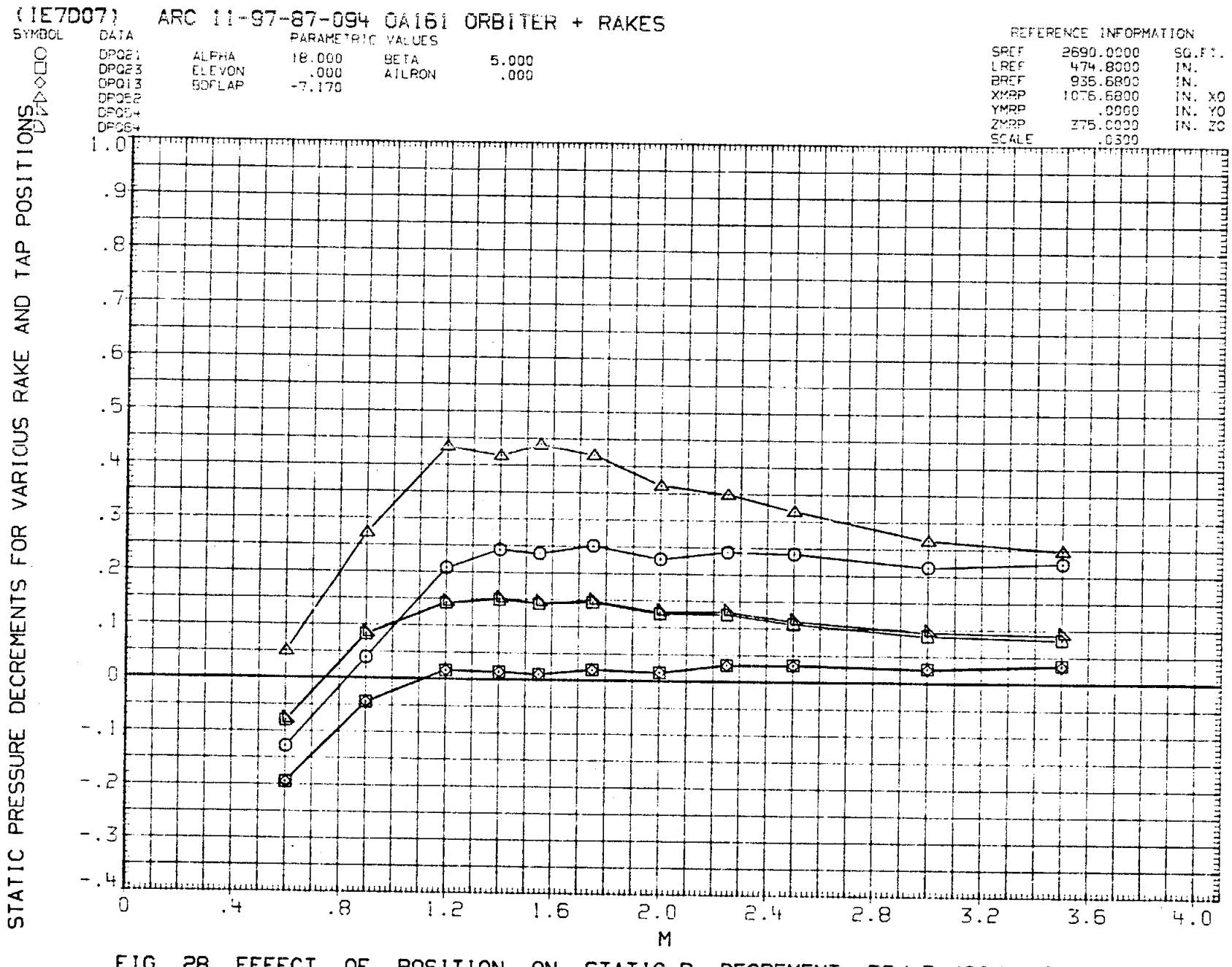


FIG. 28 EFFECT OF POSITION ON STATIC P. DECREMENT PSJ-P /QIJ BOTH RAKES

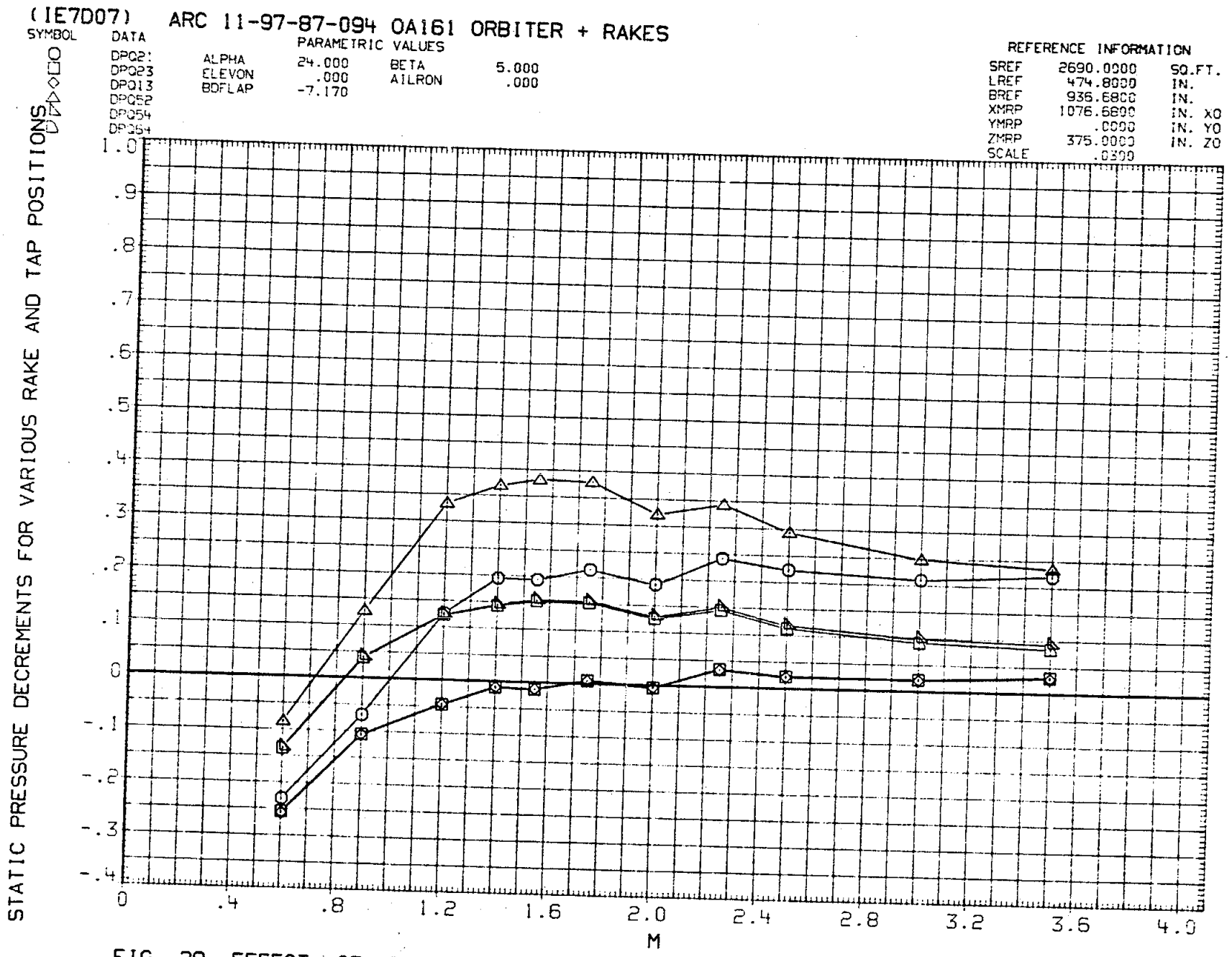


FIG. 28 EFFECT OF POSITION ON STATIC P. DECREMENT PSJ-P /QIJ BOTH RAKES

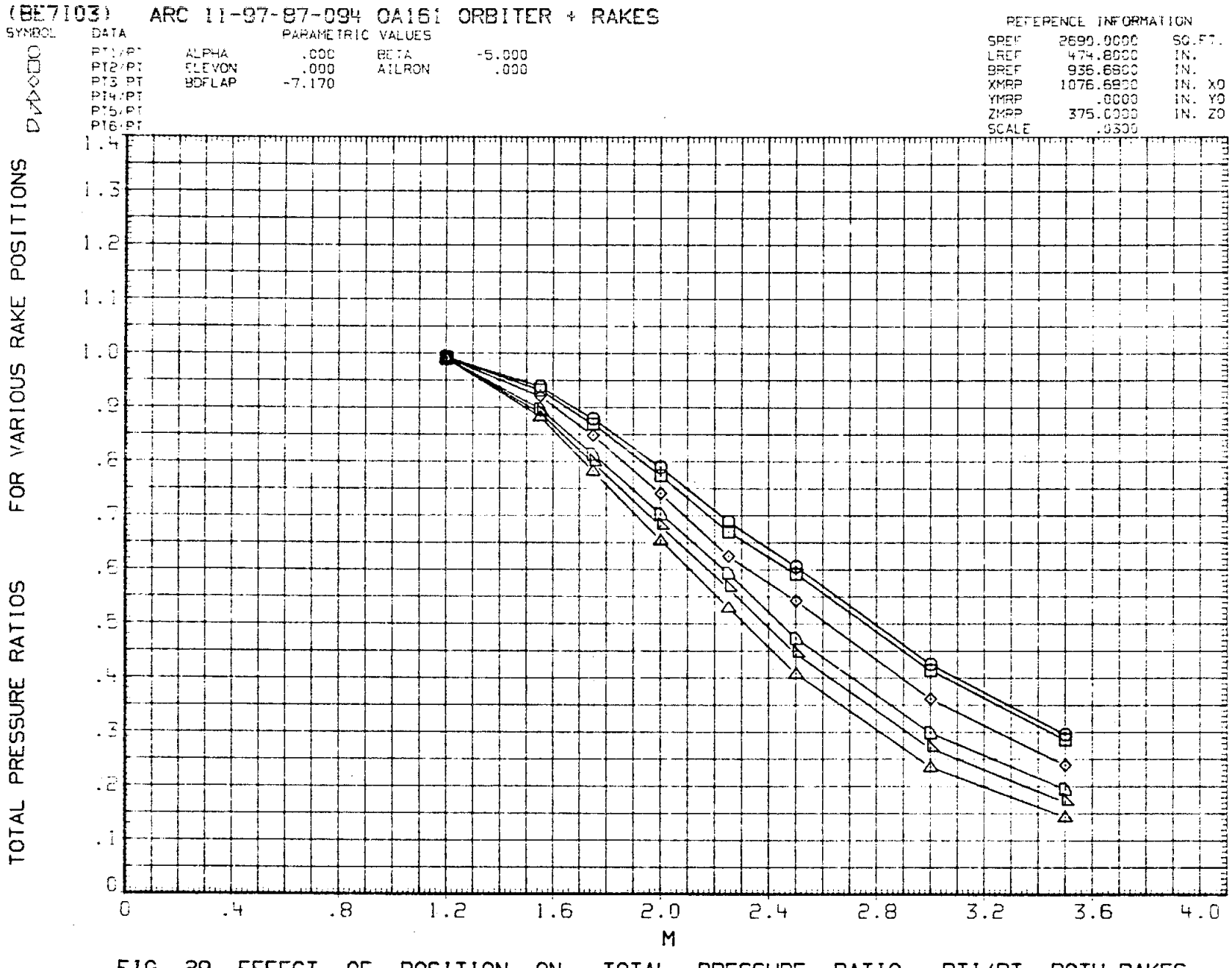


FIG. 29 EFFECT OF POSITION ON TOTAL PRESSURE RATIO PTI/PT BOTH RAKES

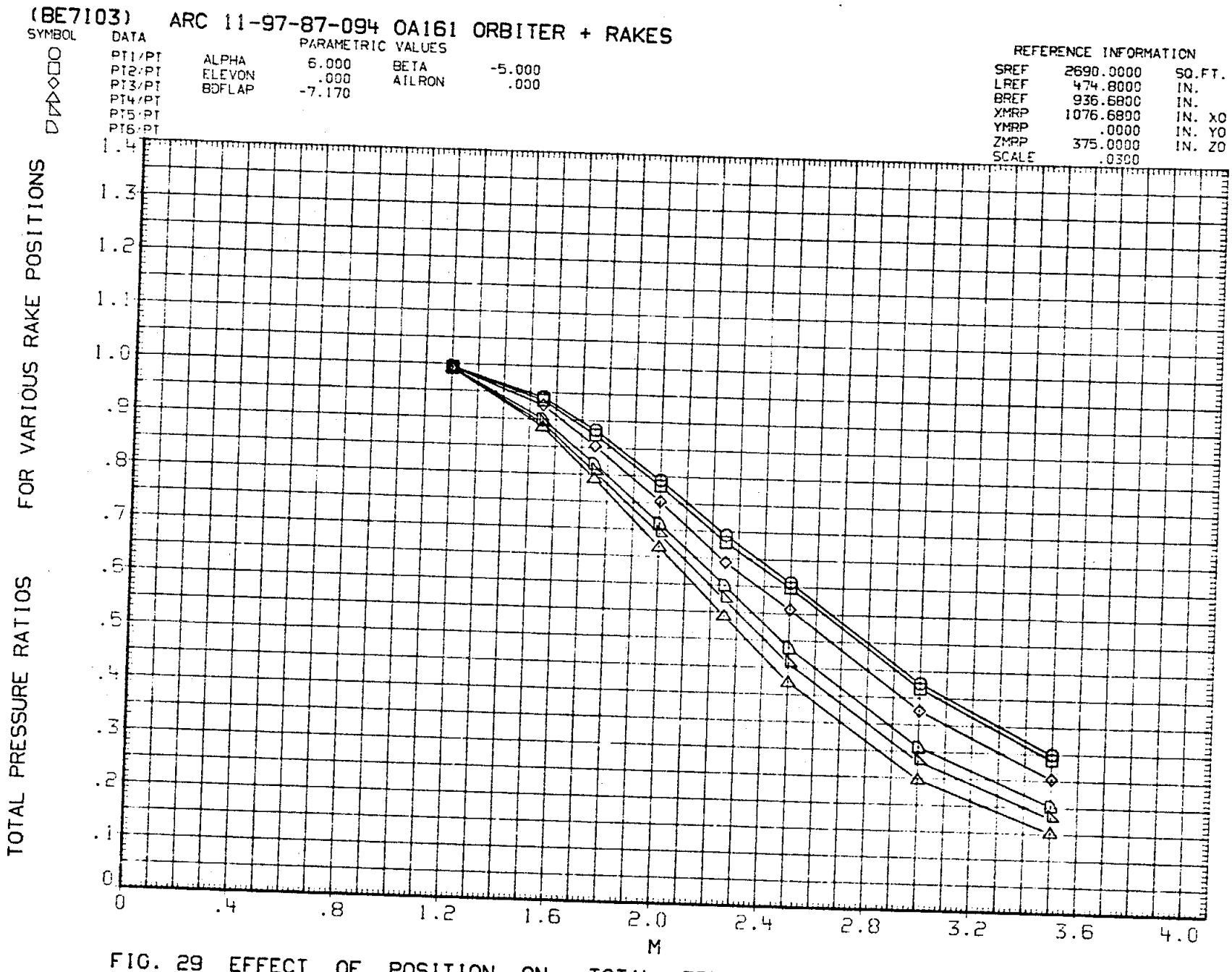


FIG. 29 EFFECT OF POSITION ON TOTAL PRESSURE RATIO PTI/PT BOTH RAKES

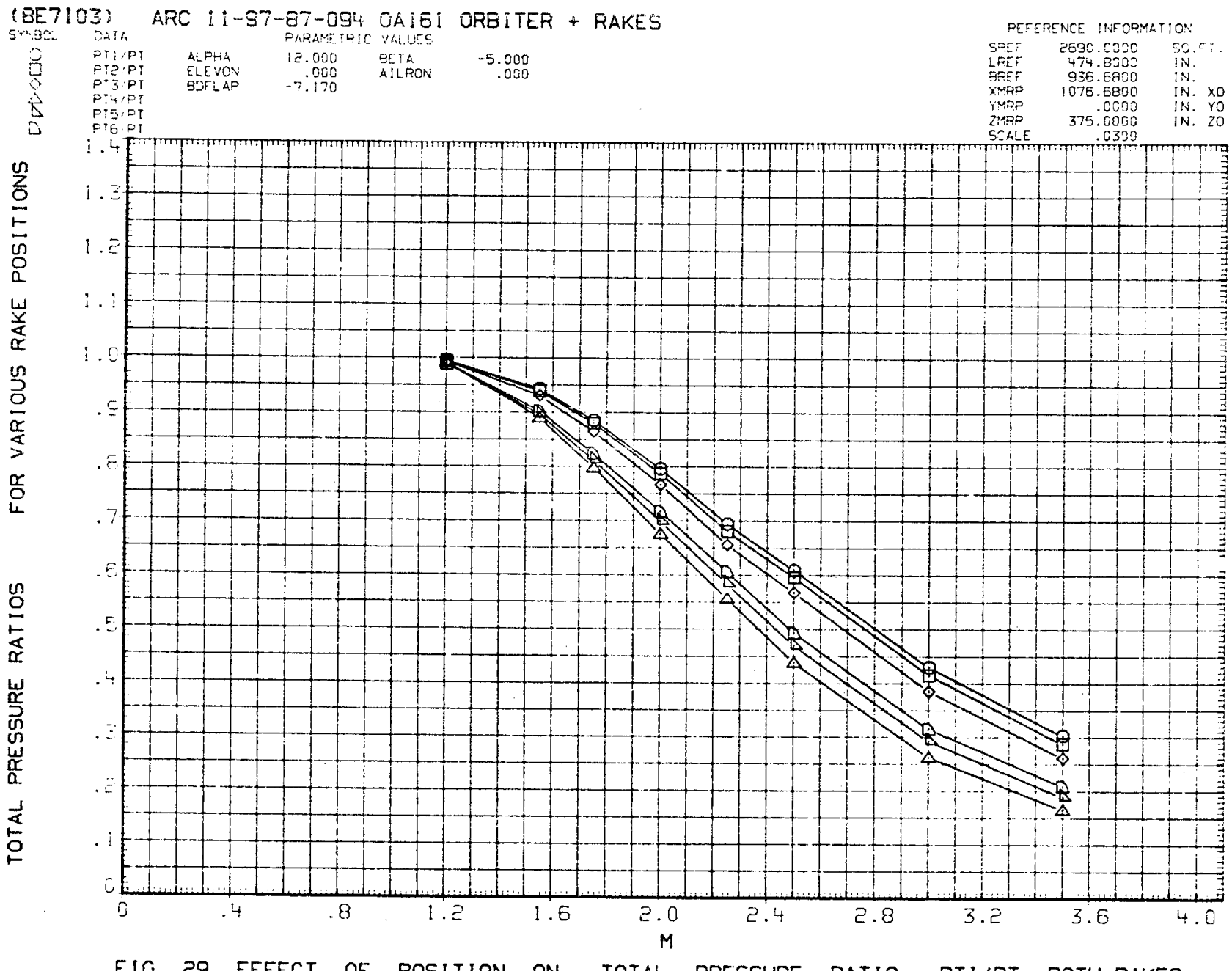


FIG. 29 EFFECT OF POSITION ON TOTAL PRESSURE RATIO PTI/PT BOTH RAKES

(BE7103) ARC 11-97-87-094 OA161 ORBITER + RAKES

SYMBOL	DATA
○	PT1/PT
□	PT2/PT
◇	PT3/PT
△	PT4/PT
▷	PT5/PT
▱	PT6/PT

PARAMETRIC VALUES

ALPHA	18.000	BETA	-5.000
ELEVON	.000	AILRON	.000
BDFLAP	-7.170		

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

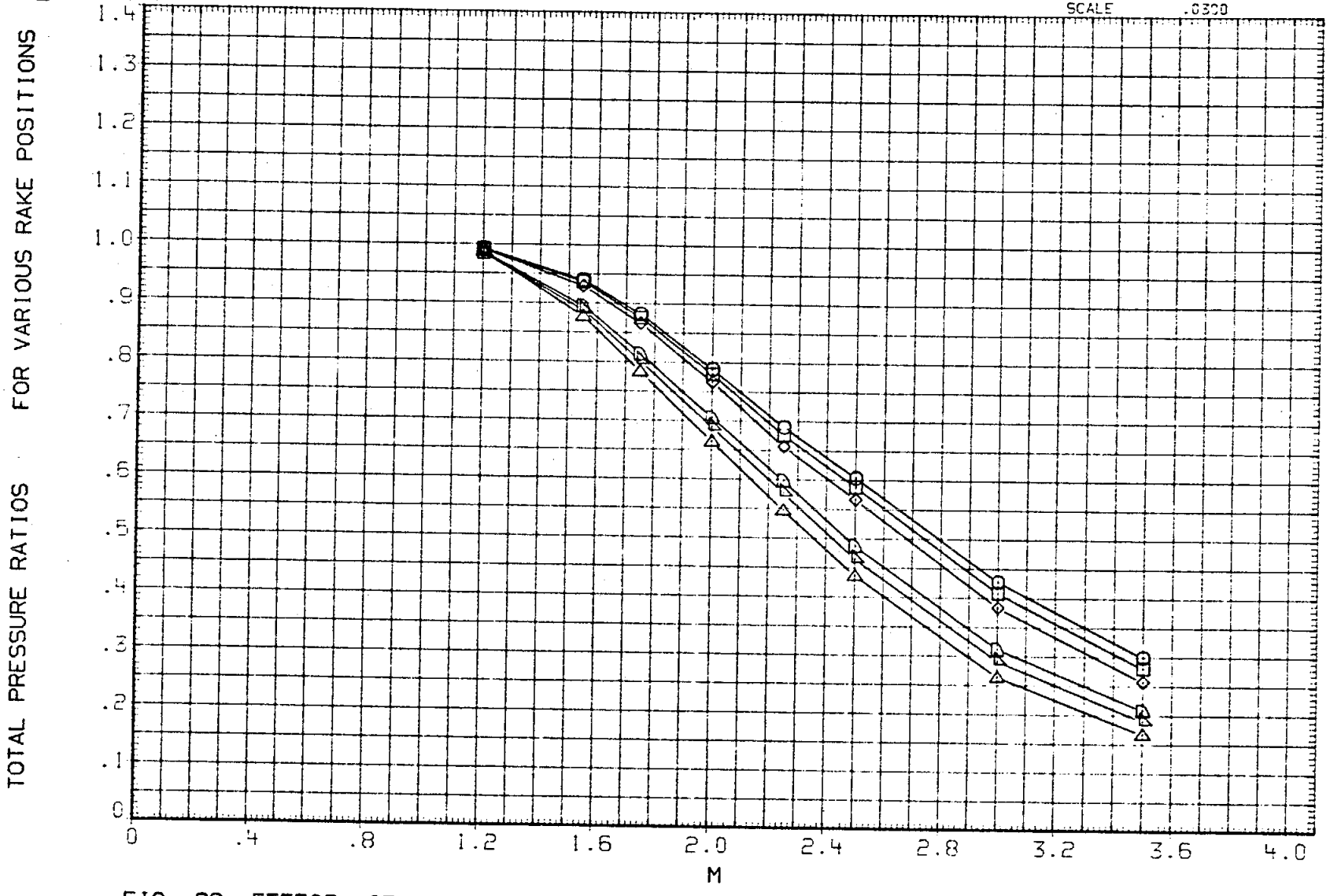


FIG. 29 EFFECT OF POSITION ON TOTAL PRESSURE RATIO PTI/PT BOTH RAKES

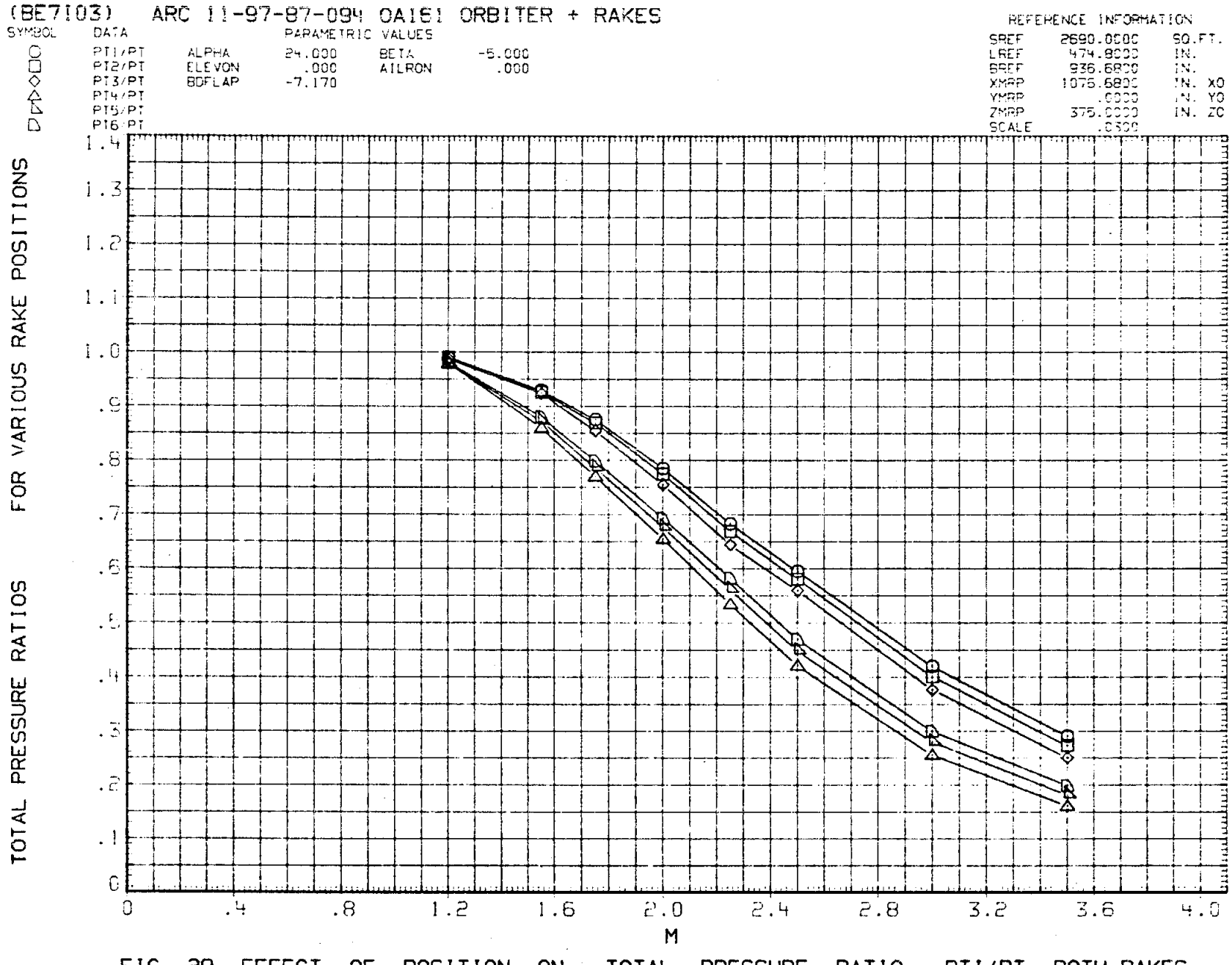


FIG. 29 EFFECT OF POSITION ON TOTAL PRESSURE RATIO PTI/PT BOTH RAKES

(BE7105) ARC 11-97-87-094 OA161 ORBITER + RAKES

SYMBOL	DATA	PARAMETRIC VALUES			
	PT1/PT	ALPHA	.000	BETA	.000
	PT2/PT	ELEVON	.000	AILRON	.000
	PT3/PT	BDFLAP	-7.170		
	PT4/PT				
	PT5/PT				
	PT6/PT				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	935.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

TOTAL PRESSURE RATIOS FOR VARIOUS RAKE POSITIONS

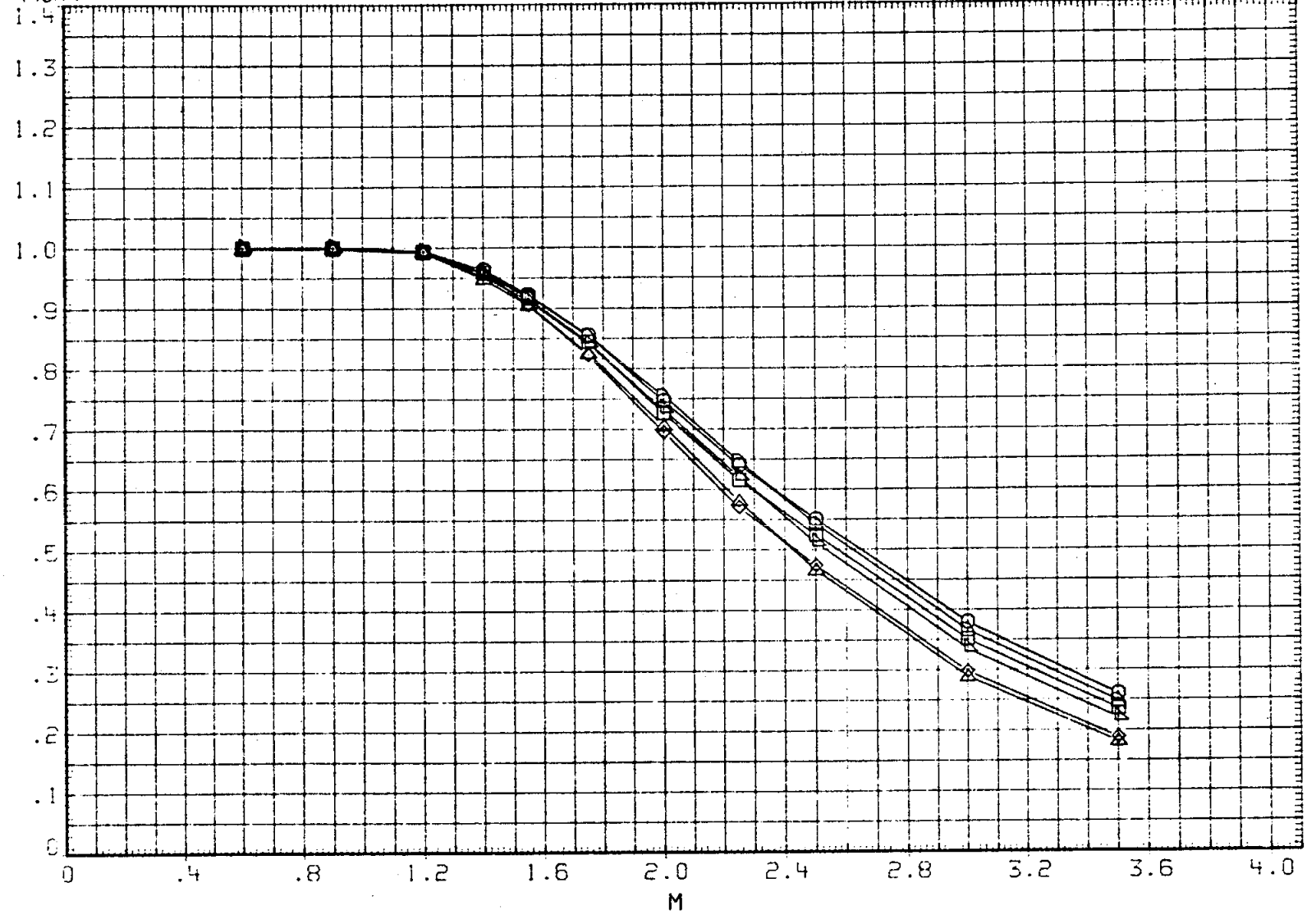


FIG. 29 EFFECT OF POSITION ON TOTAL PRESSURE RATIO PTI/PT BOTH RAKES

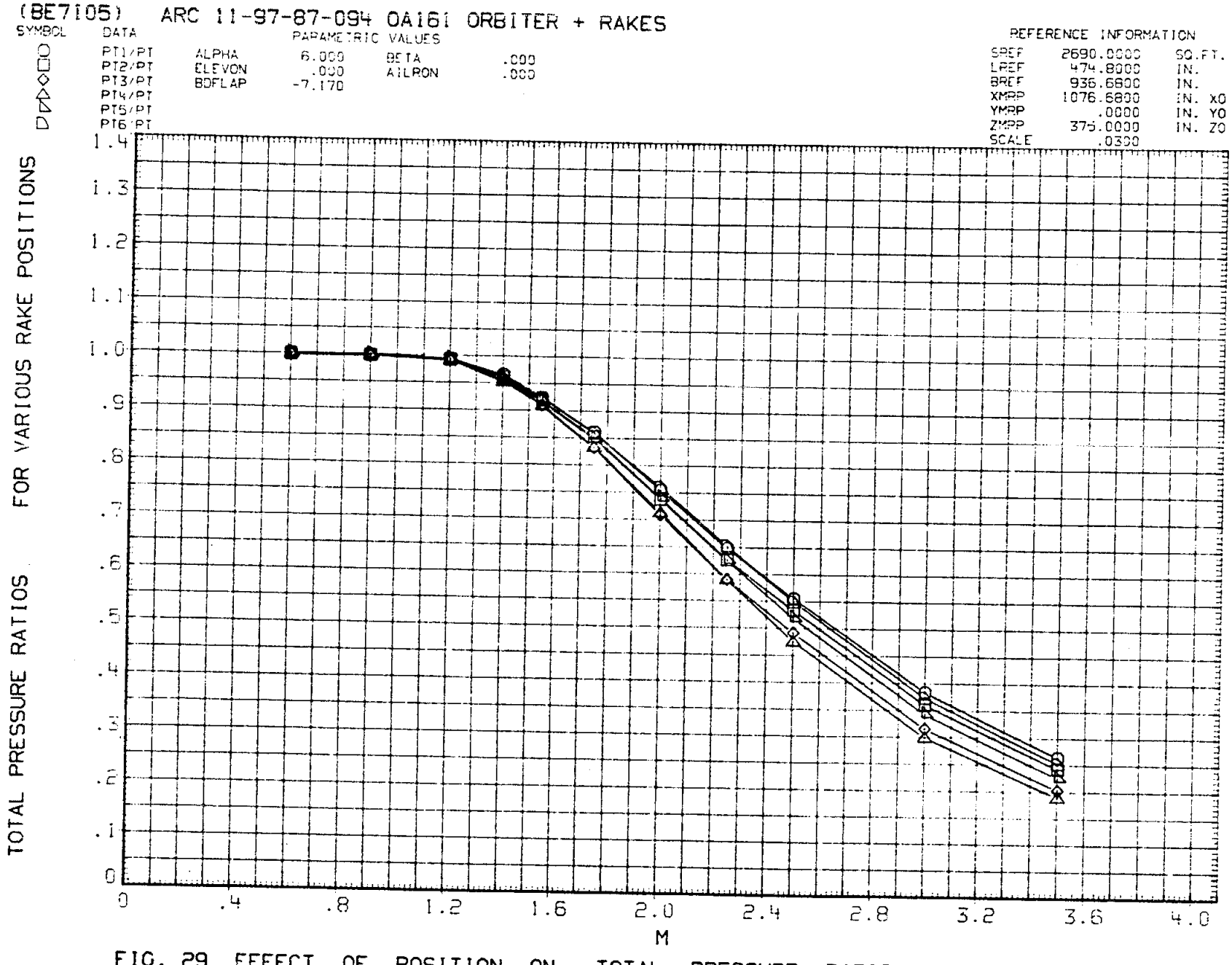


FIG. 29 EFFECT OF POSITION ON TOTAL PRESSURE RATIO PTI/PT BOTH RAKES

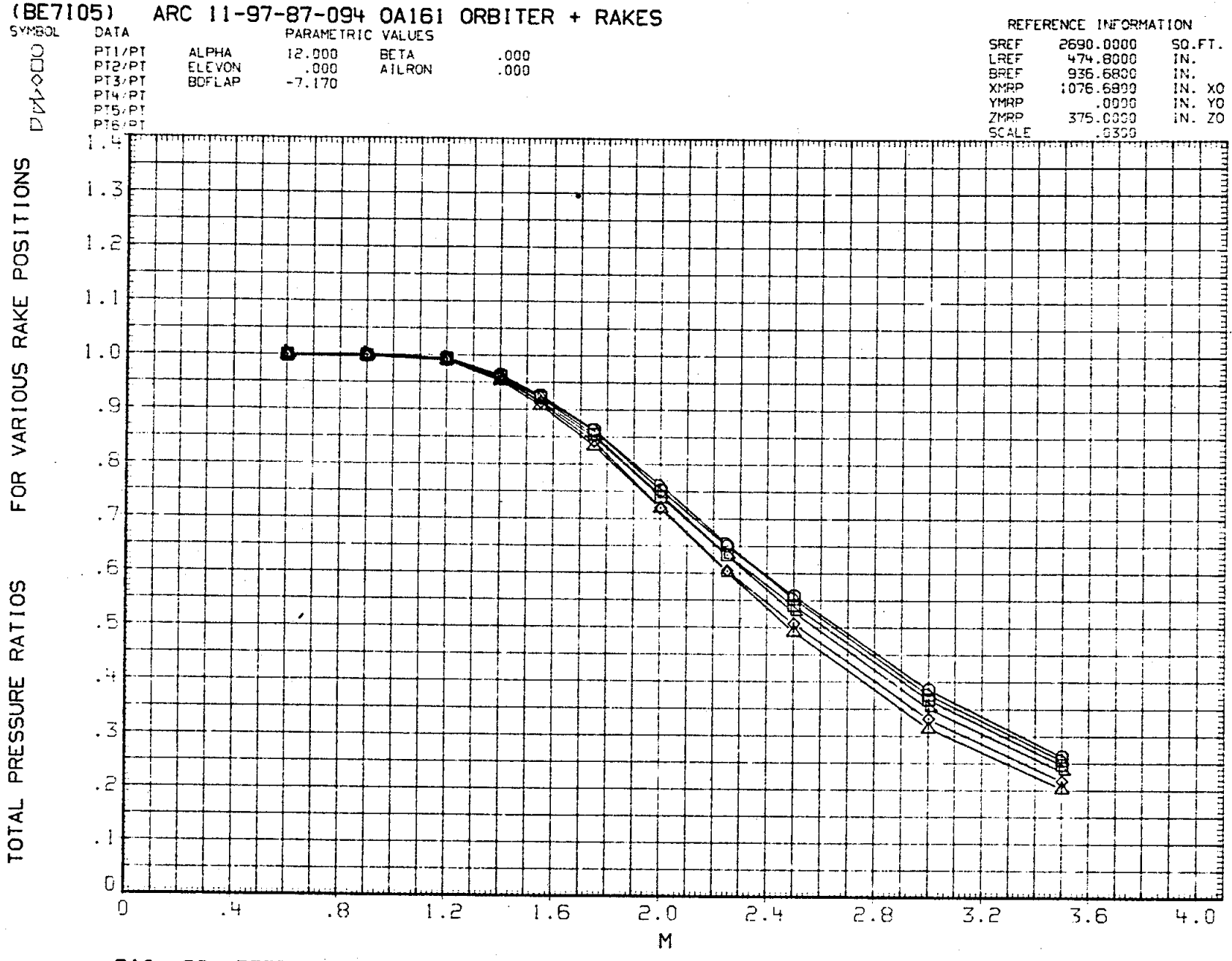


FIG. 29 EFFECT OF POSITION ON TOTAL PRESSURE RATIO PTI/PT BOTH RAKES

(BE7105) ARC 11-97-87-094 OA161 ORBITER + RAKES

SYMBOL	DATA		PARAMETRIC VALUES		
◇	PT1/PT	ALPHA	18.000	BETA	.000
□	PT2/PT	ELEVON	.000	AILRON	.000
△	PT3/PT	BDFLAP	-7.170		
	PT4/PT				
	PT5/PT				
	PT6/PT				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	935.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

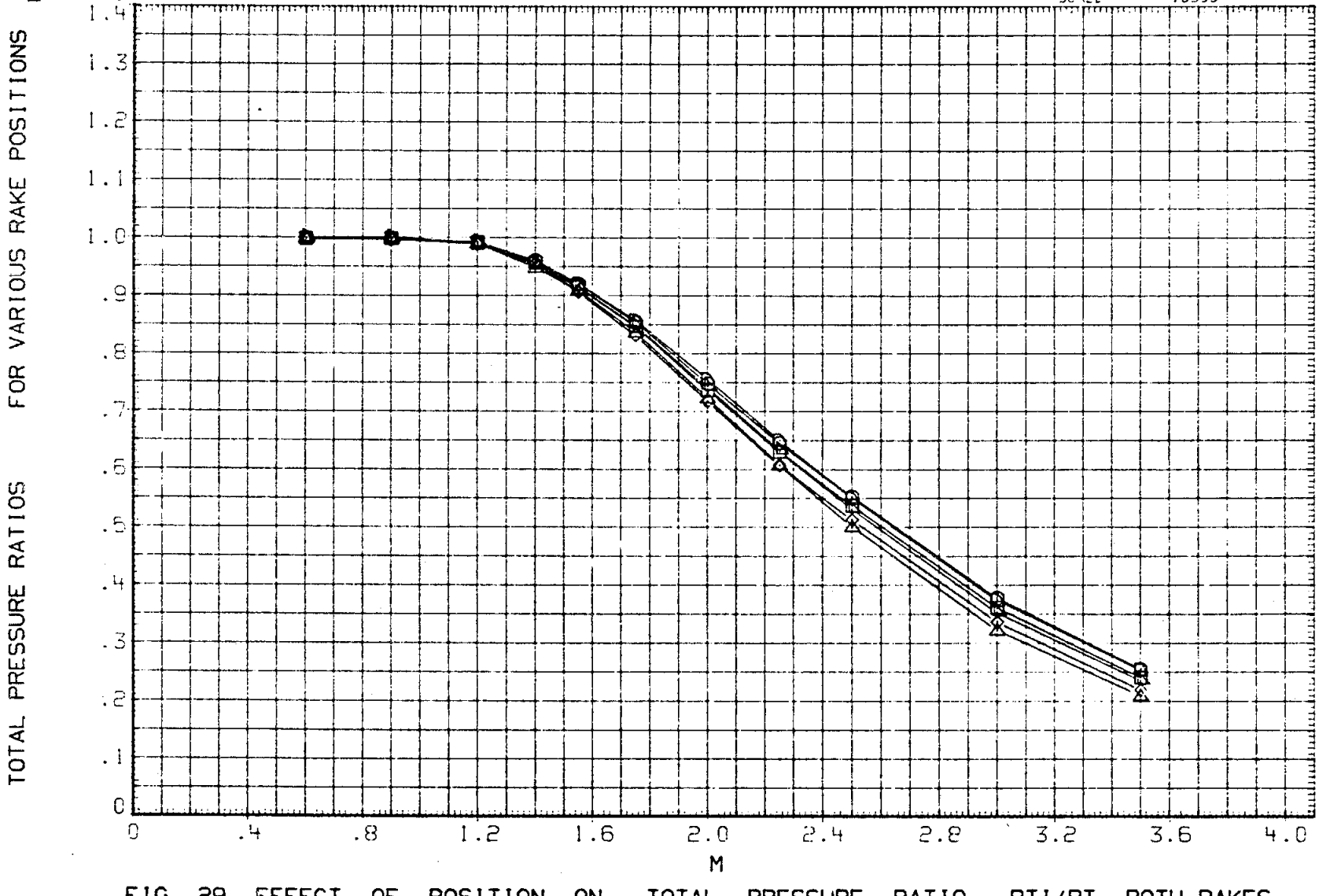


FIG. 29 EFFECT OF POSITION ON TOTAL PRESSURE RATIO PTI/PT BOTH RAKES

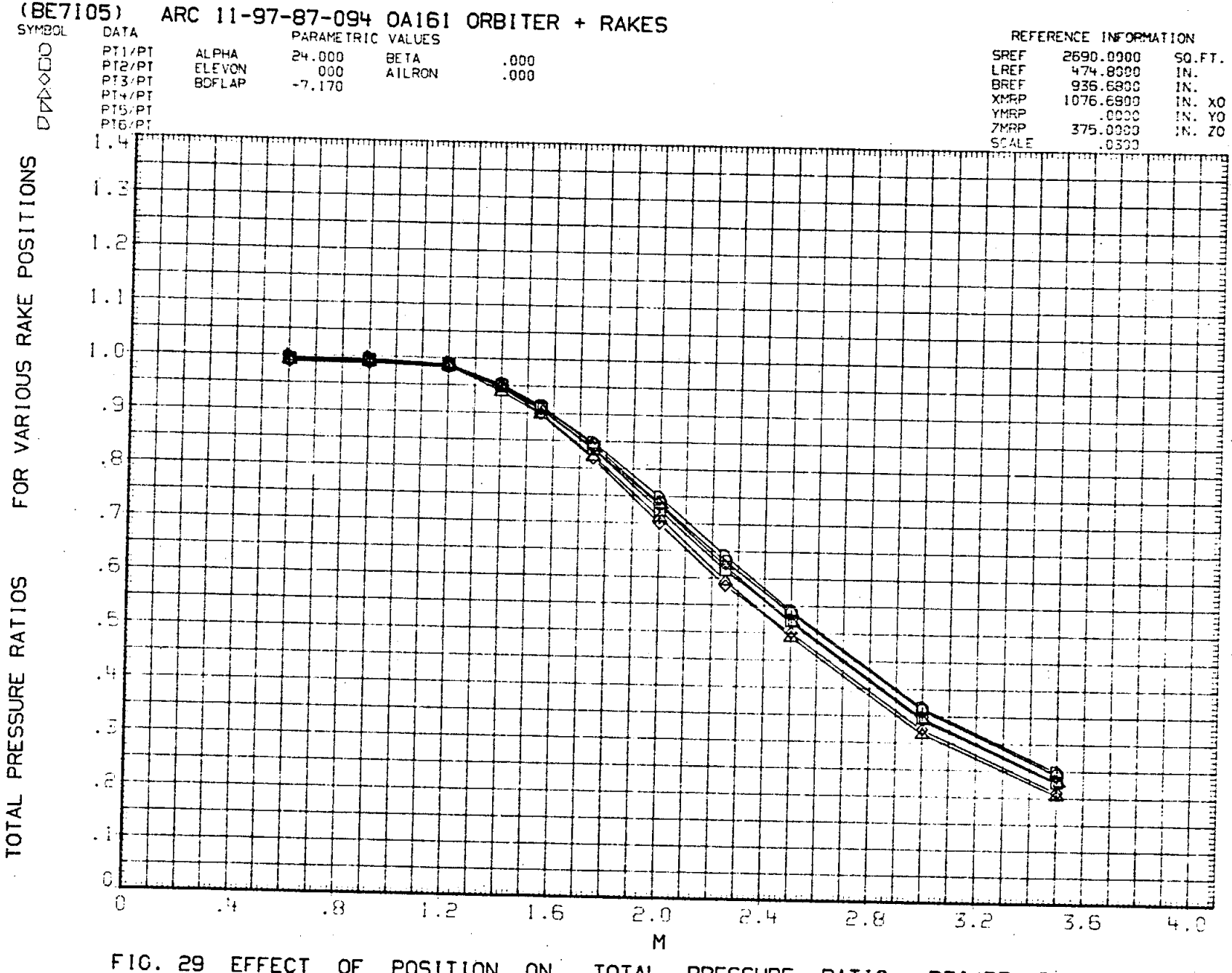


FIG. 29 EFFECT OF POSITION ON TOTAL PRESSURE RATIO PTI/PT BOTH RAKES

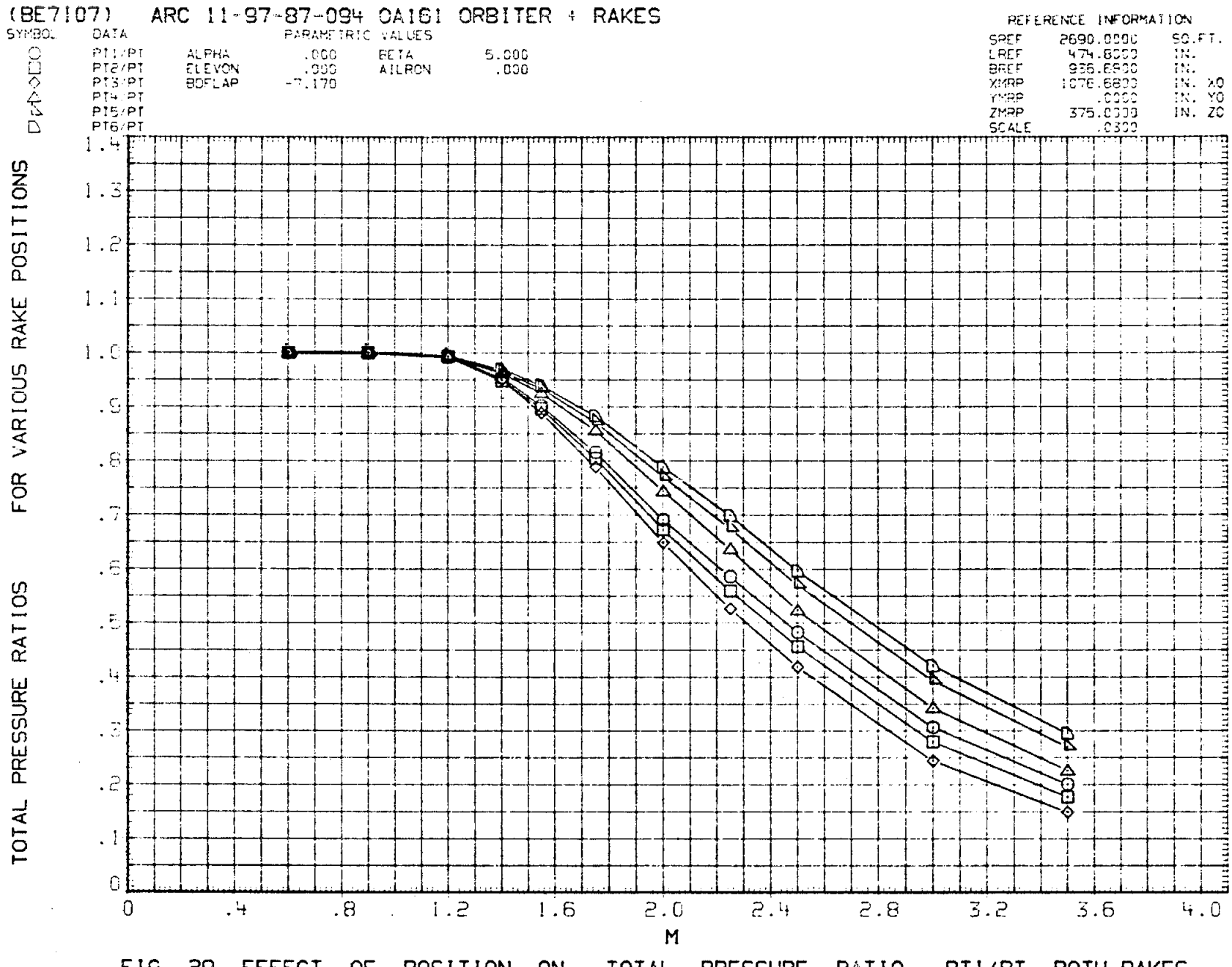


FIG. 29 EFFECT OF POSITION ON TOTAL PRESSURE RATIO PTI/PT BOTH RAKES

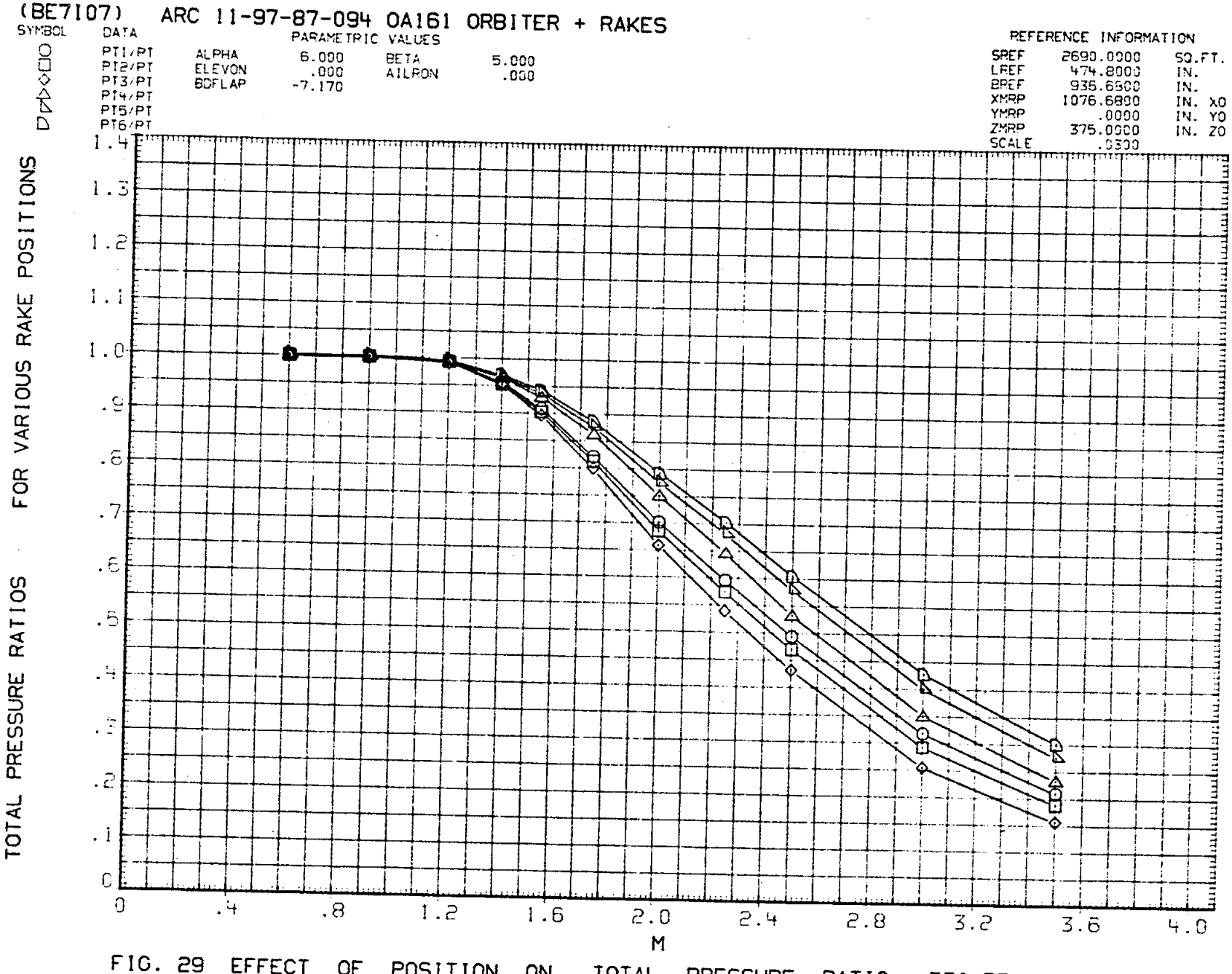


FIG. 29 EFFECT OF POSITION ON TOTAL PRESSURE RATIO PTI/PT BOTH RAKES

(BE7107) ARC 11-97-87-094 OA161 ORBITER + RAKES

SYMBOL	DATA	PARAMETRIC VALUES			
□	PT1/PT	ALPHA	12.000	BETA	5.000
△	PT2/PT	ELEVON	.000	AILRON	.000
○	PT3/PT	BDFLAP	-7.170		
◇	PT4/PT				
	PT5/PT				
	PT6/PT				

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

TOTAL PRESSURE RATIOS FOR VARIOUS RAKE POSITIONS

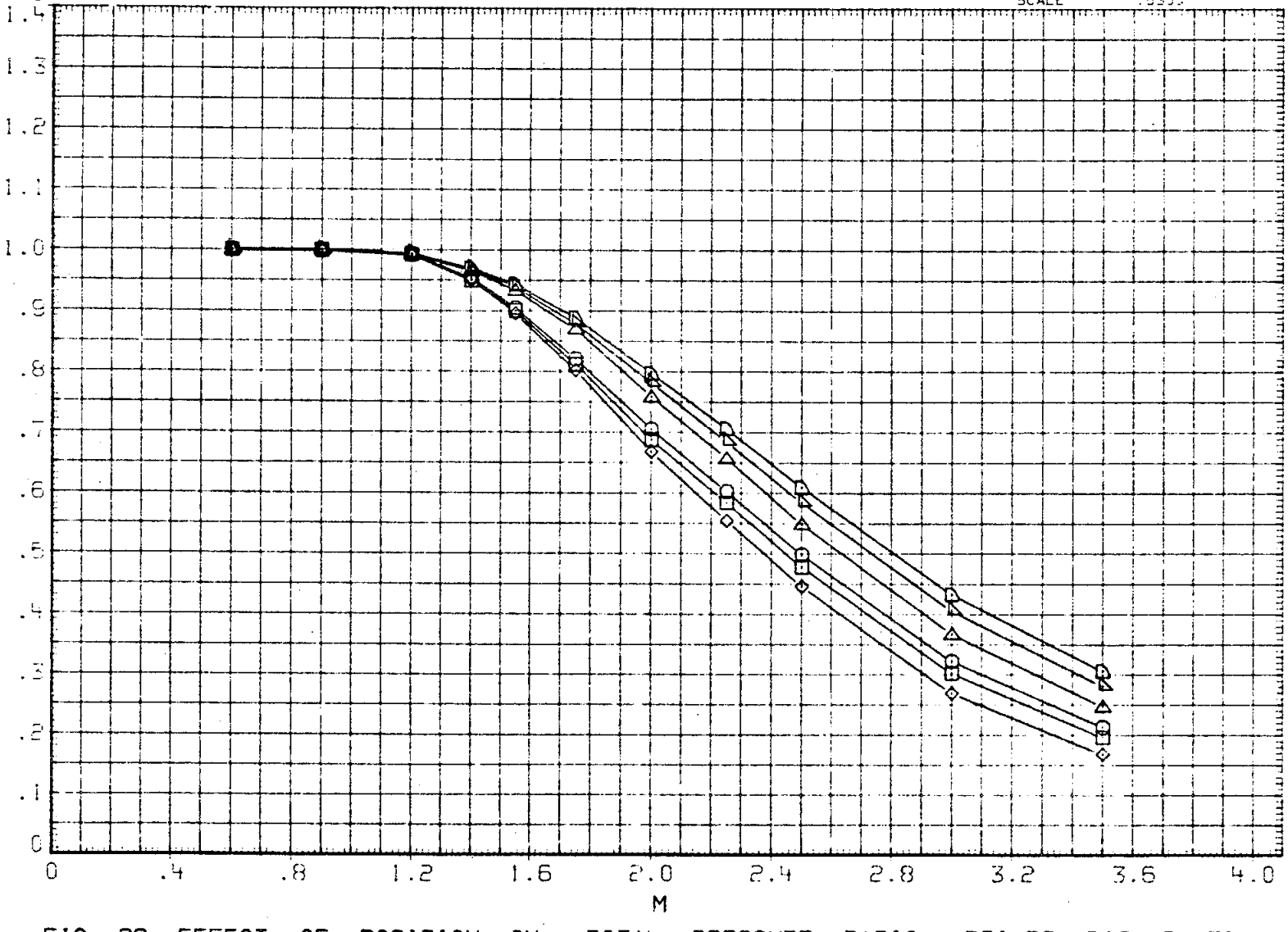


FIG. 29 EFFECT OF POSITION ON TOTAL PRESSURE RATIO PTI/PT BOTH RAKES

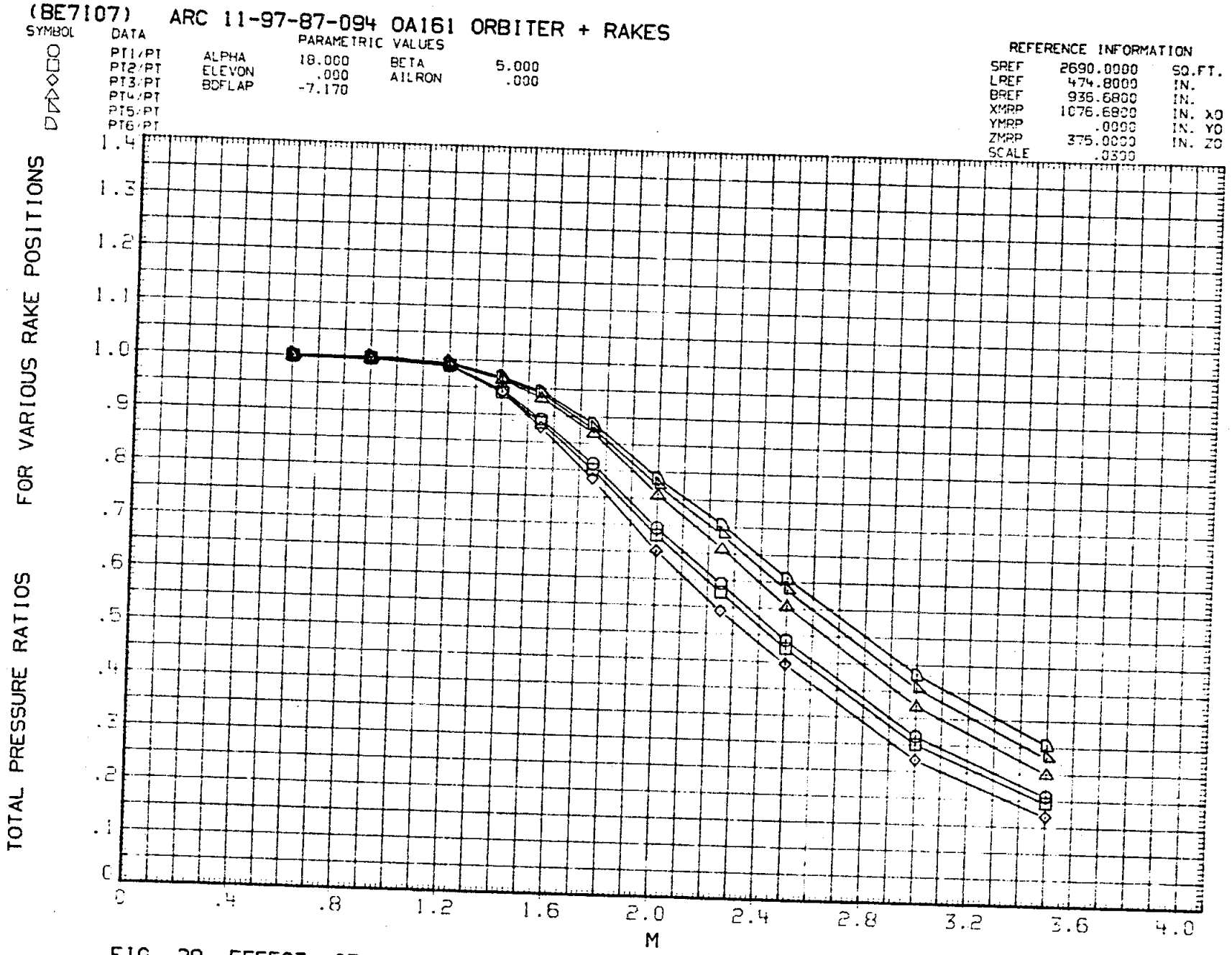


FIG. 29 EFFECT OF POSITION ON TOTAL PRESSURE RATIO PTI/PT BOTH RAKES

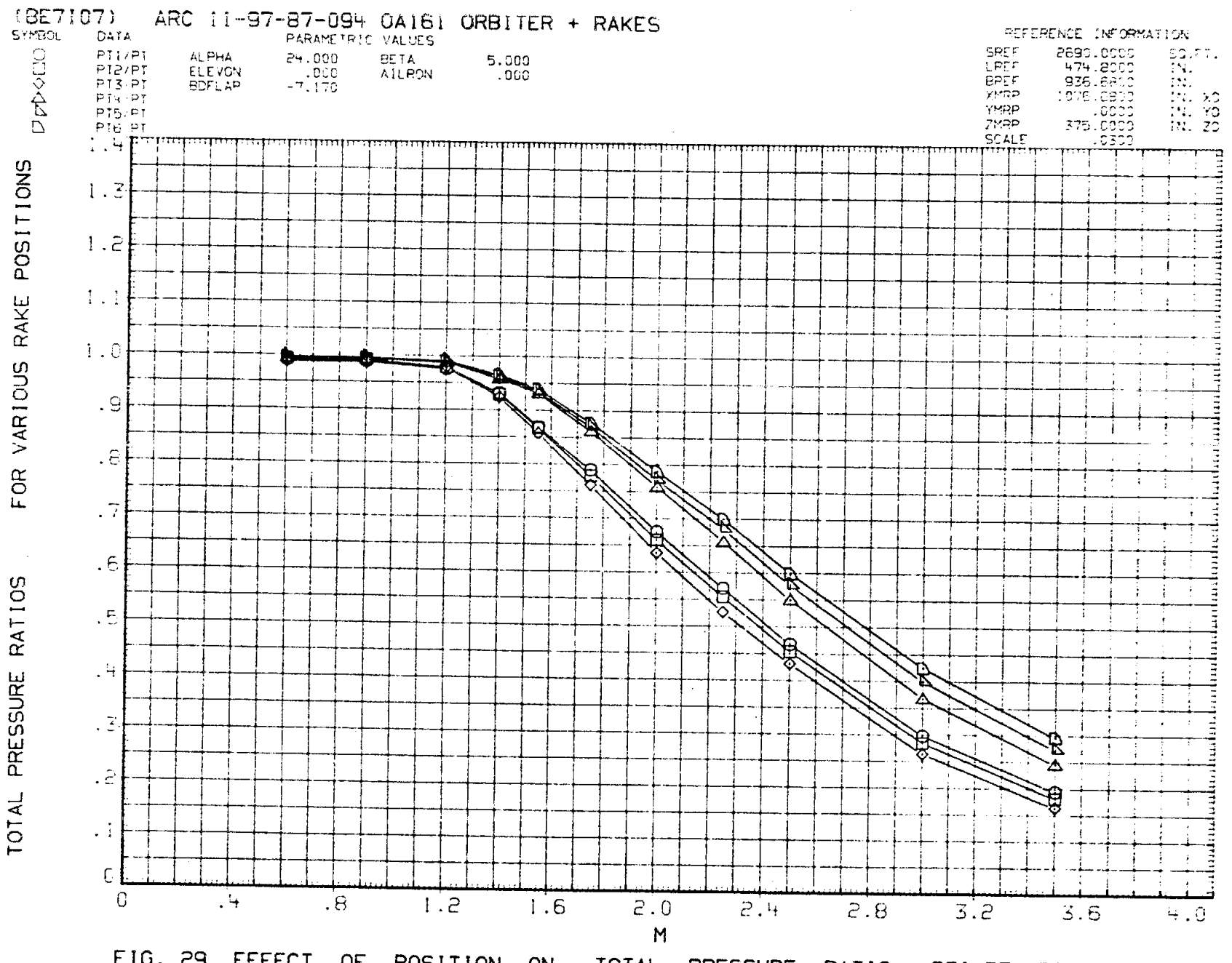


FIG. 29 EFFECT OF POSITION ON TOTAL PRESSURE RATIO PTI/PT BOTH RAKES

DATA SET	SYMBOL	CONFIGURATION
AE7B03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES
AE7B13	□	ARC 11-97-87-094 OA161 ORBITER
AE7B18	◇	ARC 11-97-87-094 OA161 ORBITER
AE7B23	△	ARC 11-97-87-094 OA161 ORBITER

BETA	ELEVON	AILRON	BDFLAP
-5.000	.000	.000	-7.170
-5.000	.000	.000	-7.170
-5.000	.000	2.500	-7.170
-5.000	.000	5.000	-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

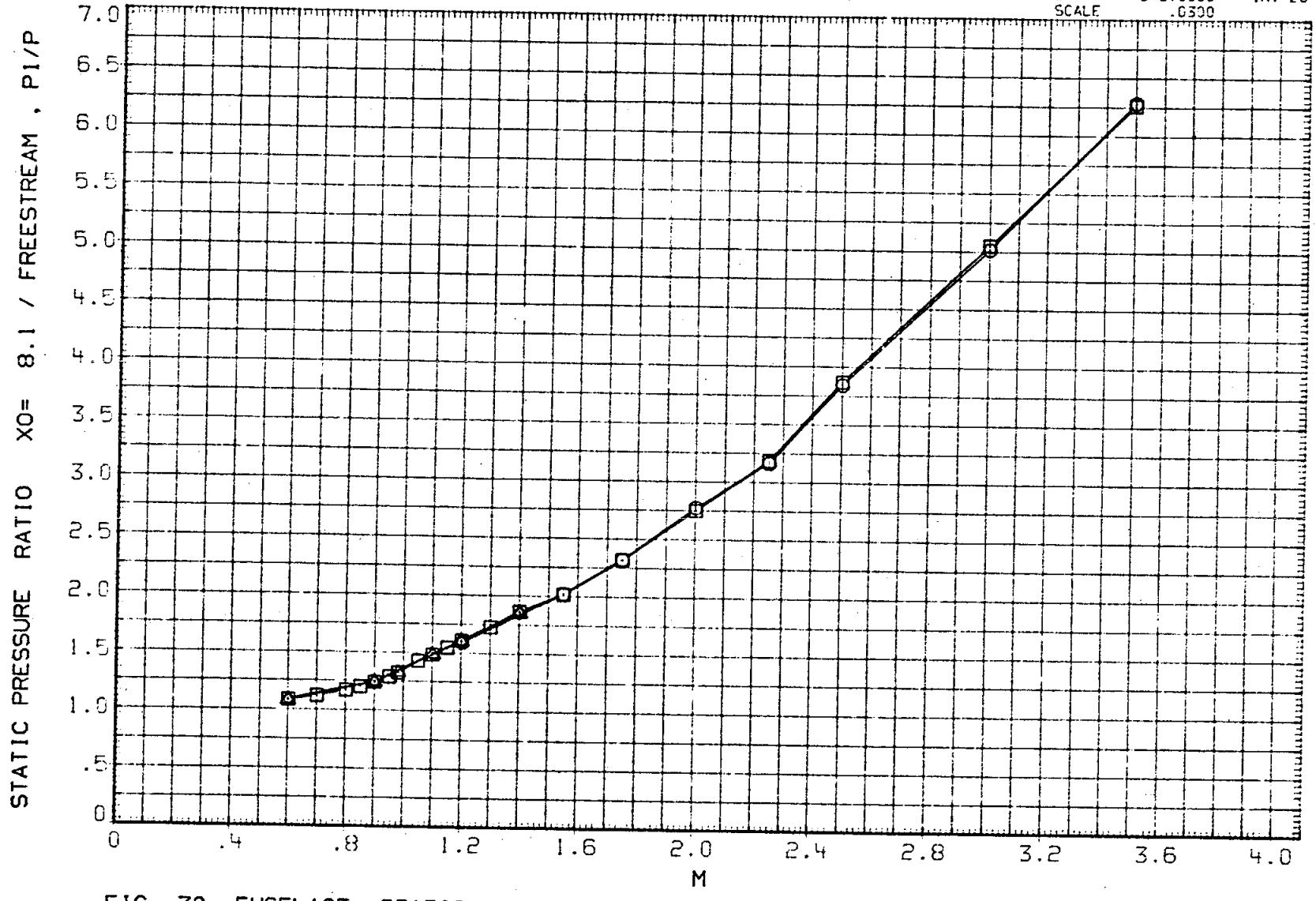


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(A)ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION
AE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES
AE7813	□	ARC 11-97-87-094 OA161 ORBITER
AE7818	◇	ARC 11-97-87-094 OA161 ORBITER
AE7823	△	ARC 11-97-87-094 OA161 ORBITER

BETA	ELEVON	AILRON	BDFLAP
-5.000	.000	.000	-7.170
-5.000	.000	.000	-7.170
-5.000	.000	2.500	-7.170
-5.000	.000	5.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6600	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

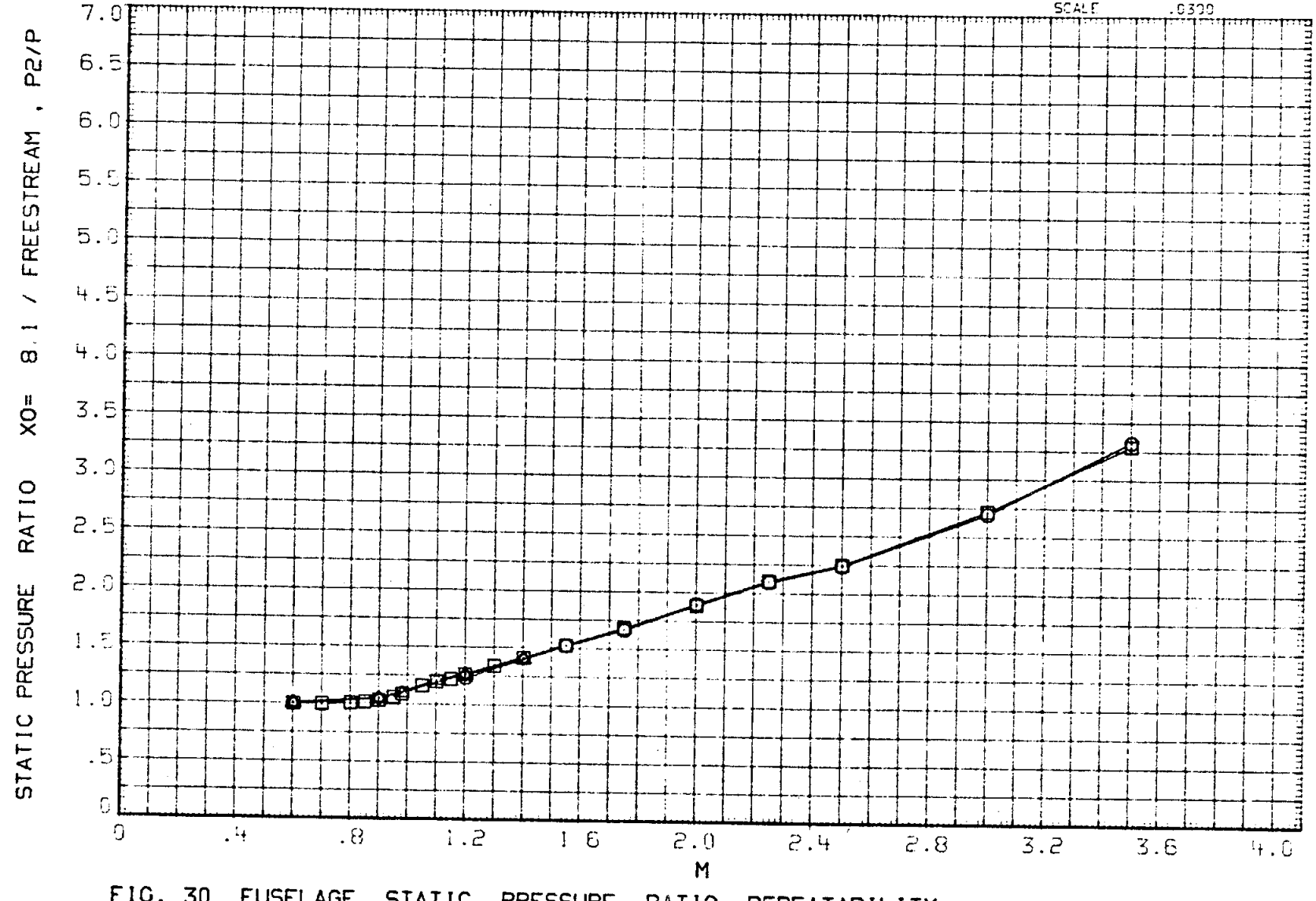


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(A)ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION
AE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES
AE7813	□	ARC 11-97-87-094 OA161 ORBITER
AE7818	◇	ARC 11-97-87-094 OA161 ORBITER
AE7823	△	ARC 11-97-87-094 OA161 ORBITER

BETA	ELEVON	AILRON	BDFLAP
-5.000	.000	.000	-7.170
-5.000	.000	.000	-7.170
-5.000	.000	2.500	-7.170
-5.000	.000	5.000	-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZC
SCALE	.0300	

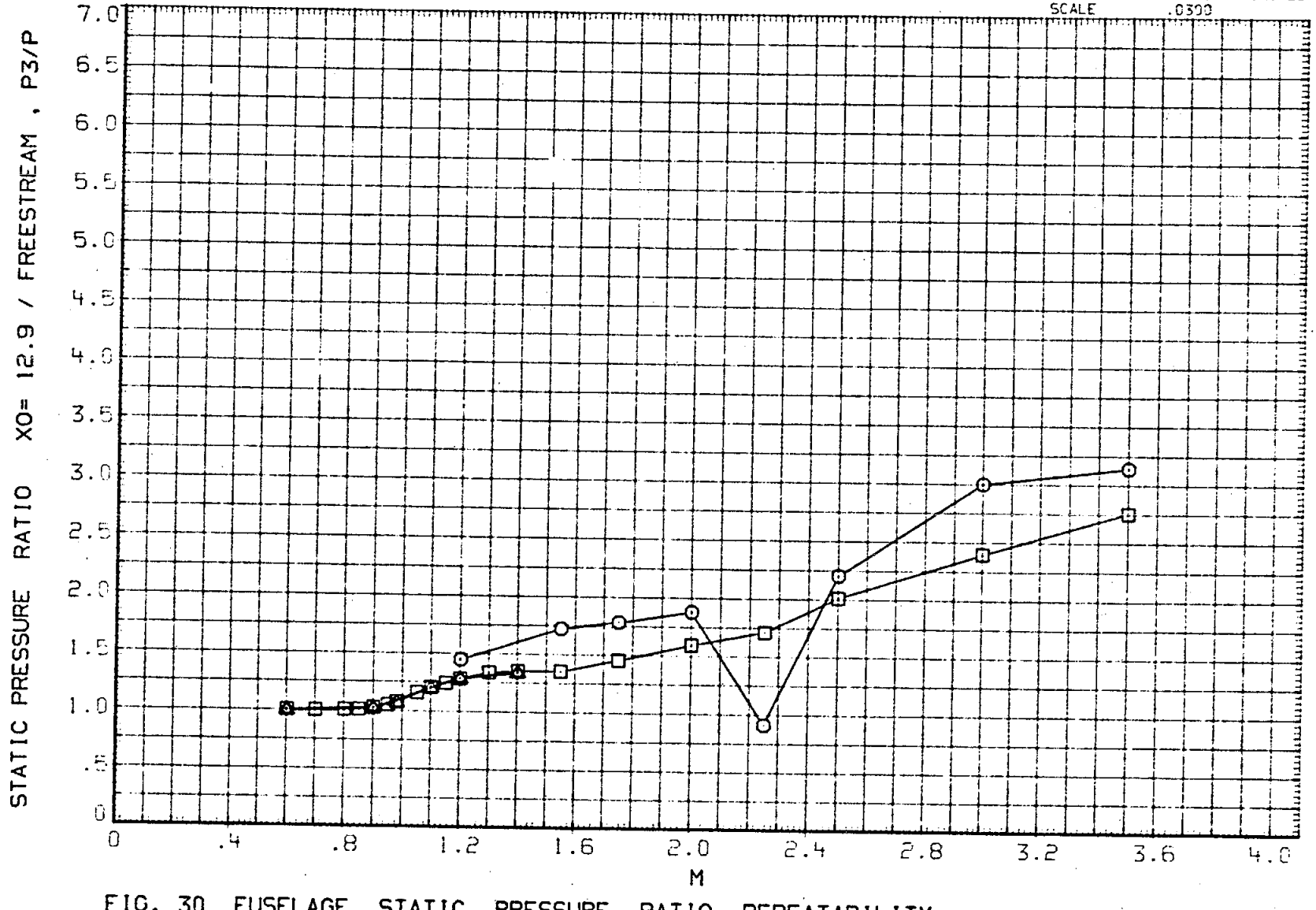


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(A) ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BOFLAP
AE7B03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
AE7B13	□	ARC 11-97-87-094 OA161 ORBITER	-5.000	.000	.000	-7.170
AE7B18	◇	ARC 11-97-87-094 OA161 ORBITER	-5.000	.000	2.500	-7.170
AE7B23	△	ARC 11-97-87-094 OA161 ORBITER	-5.000	.000	5.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XB
YMRP	.0000	IN. YB
ZMRP	375.0000	IN. ZB
SCALE	.0800	

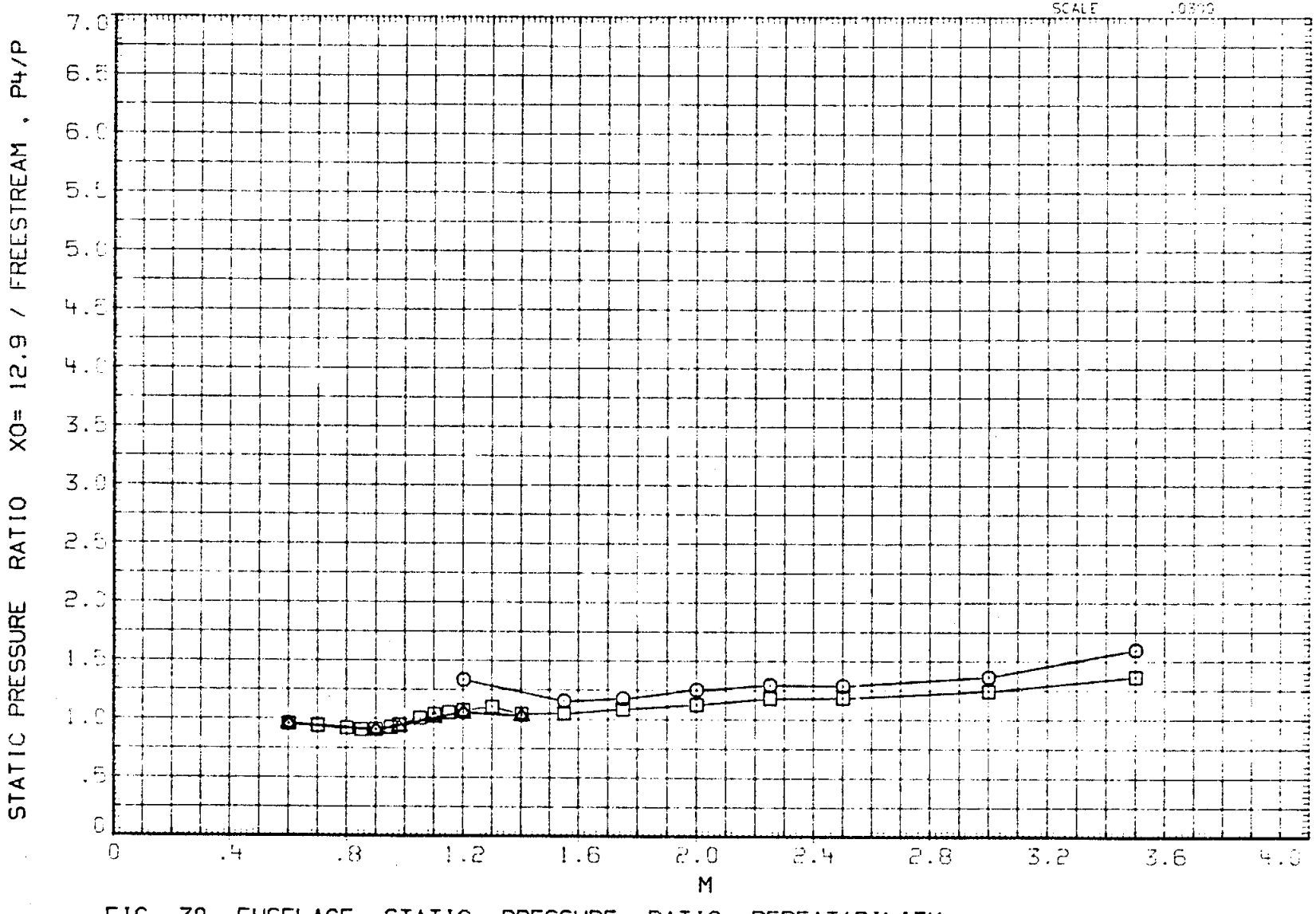


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(A)ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION
AE7803	○	ARC 11-97-87-094 0A161 ORBITER + RAKES
AE7813	□	ARC 11-97-87-094 0A161 ORBITER
AE7818	◇	DATA NOT AVAILABLE
AE7823	△	DATA NOT AVAILABLE

BETA	ELEVON	AILRON	BDFLAP
-5.000	.000	.000	-7.170
-5.000	.000	.000	-7.170
-5.000	.000	2.500	-7.170
-5.000	.000	5.000	-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

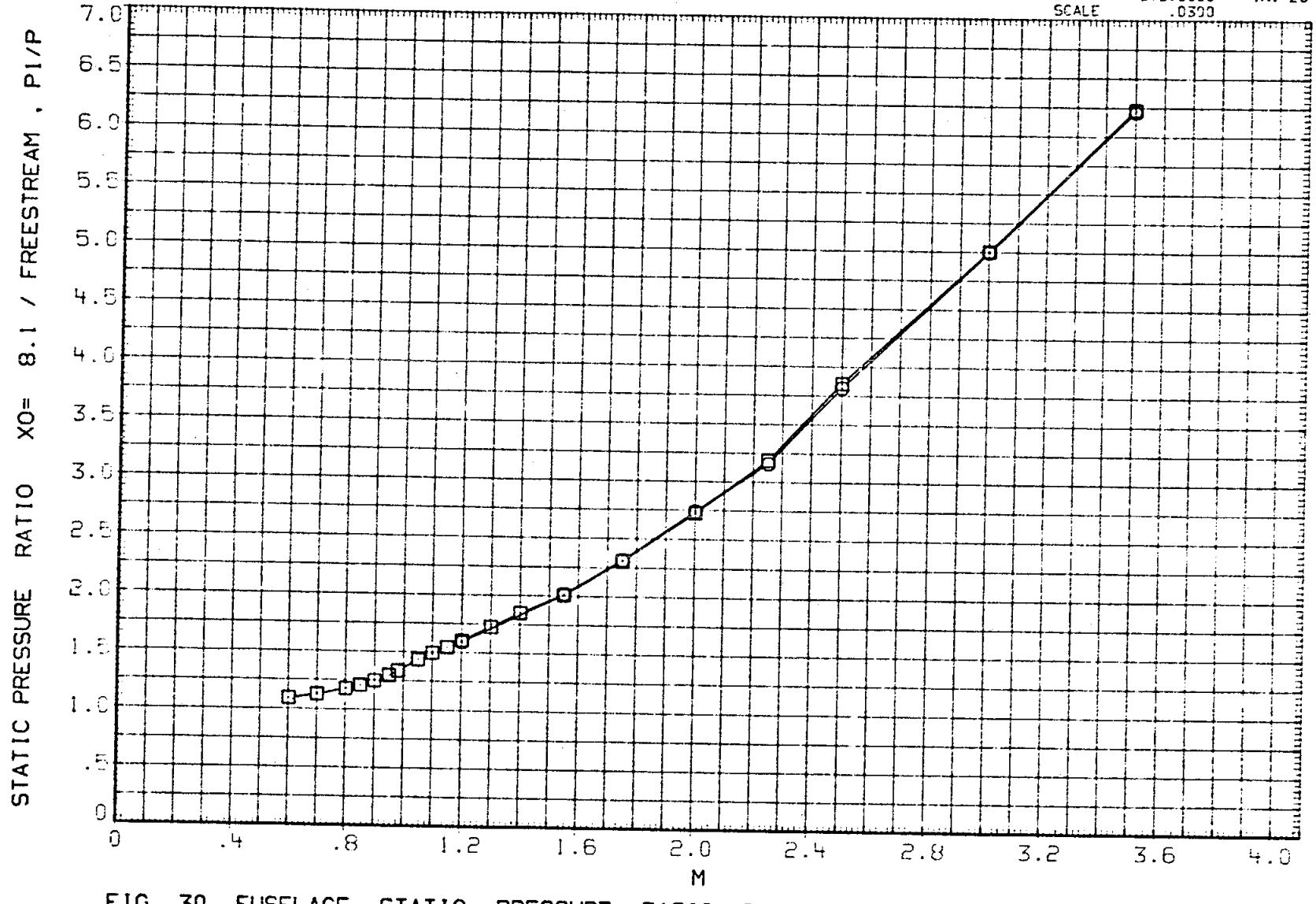


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(B)ALPHA = 6.00

DATA SET	SYMBOL	CONFIGURATION
AE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES
AE7813	□	ARC 11-97-87-094 OA161 ORBITER
AE7818	◇	DATA NOT AVAILABLE
AE7823	△	DATA NOT AVAILABLE

BETA	ELEVON	AILRON	BDFLAP
-5.000	.000	.000	-7.170
-5.000	.000	.000	-7.170
-5.000	.000	2.500	-7.170
-5.000	.000	5.000	-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

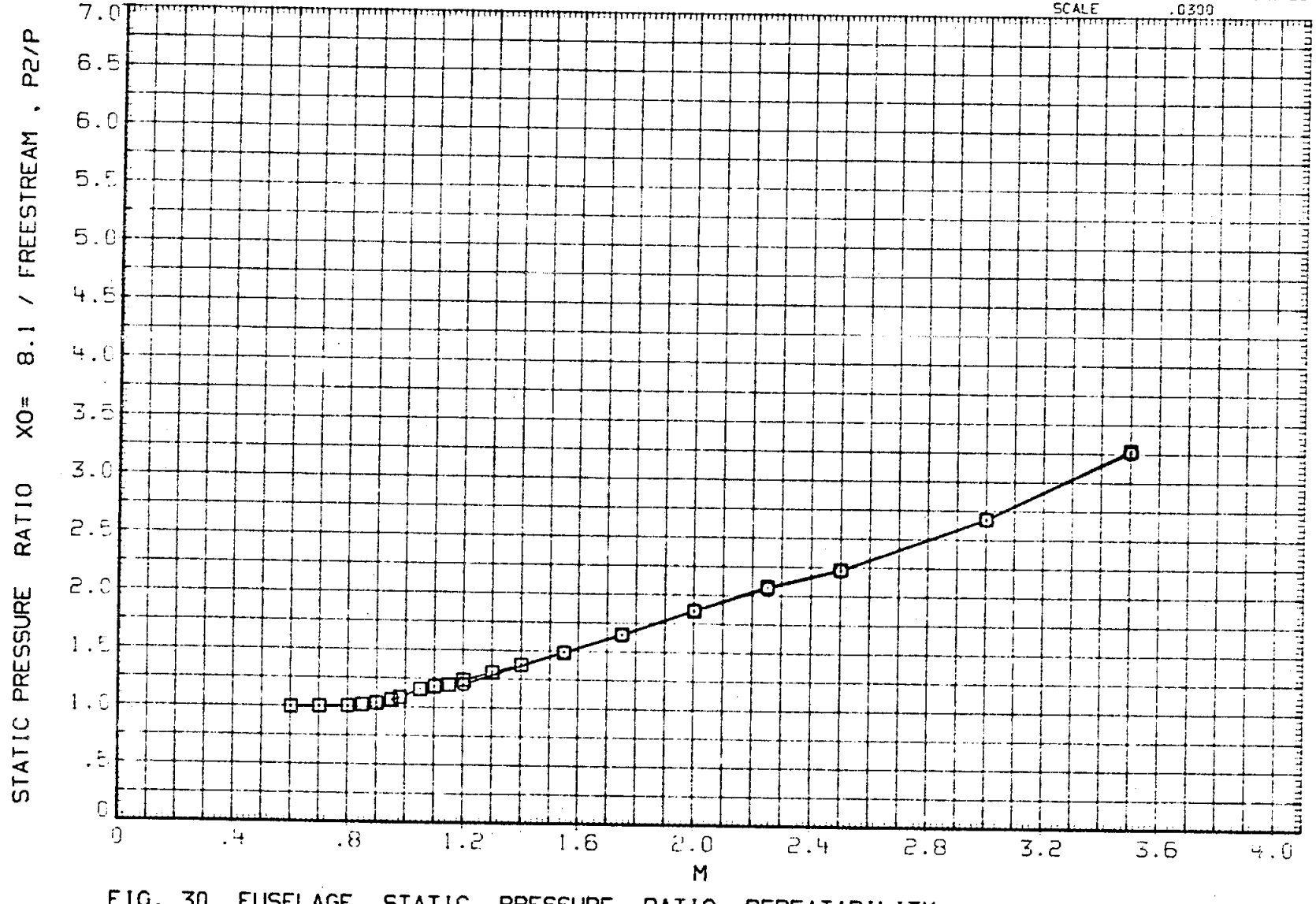


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(B)ALPHA = 6.00

DATA SET	SYMBOL	CONFIGURATION
AE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES
AE7813	□	ARC 11-97-87-094 OA161 ORBITER
AE7818	◇	DATA NOT AVAILABLE
AE7823	△	DATA NOT AVAILABLE

BETA	ELEVON	AILRON	BOFLAP
-5.000	.000	.000	-7.170
-5.000	.000	.000	-7.170
-5.000	.000	2.500	-7.170
-5.000	.000	5.000	-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

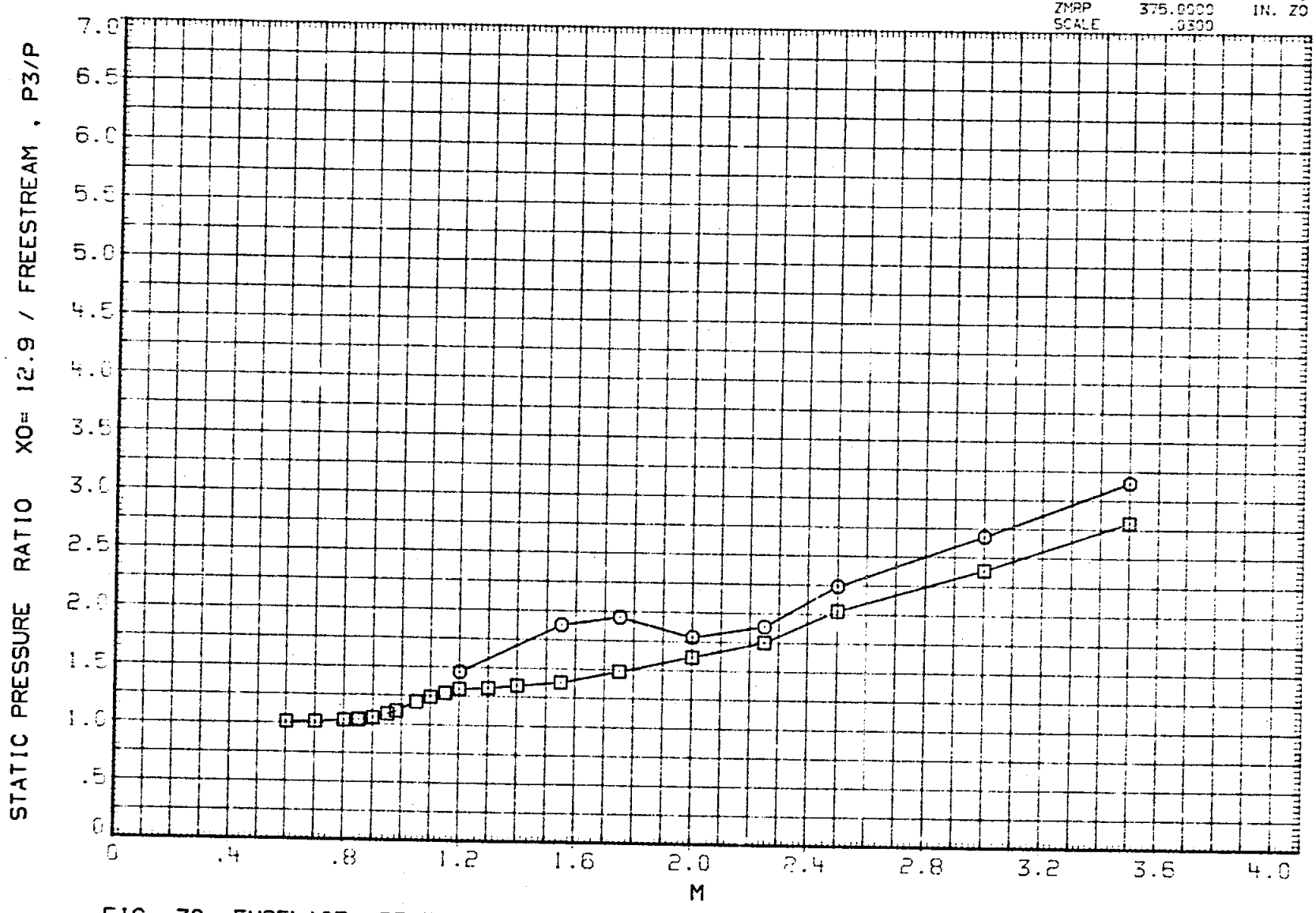


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(B) ALPHA = 6.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
AE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
AE7813	□	ARC 11-97-87-094 OA161 ORBITER	-5.000	.000	.000	-7.170
AE7818	◇	DATA NOT AVAILABLE	-5.000	.000	2.500	-7.170
AE7823	△	DATA NOT AVAILABLE	-5.000	.000	5.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0390	

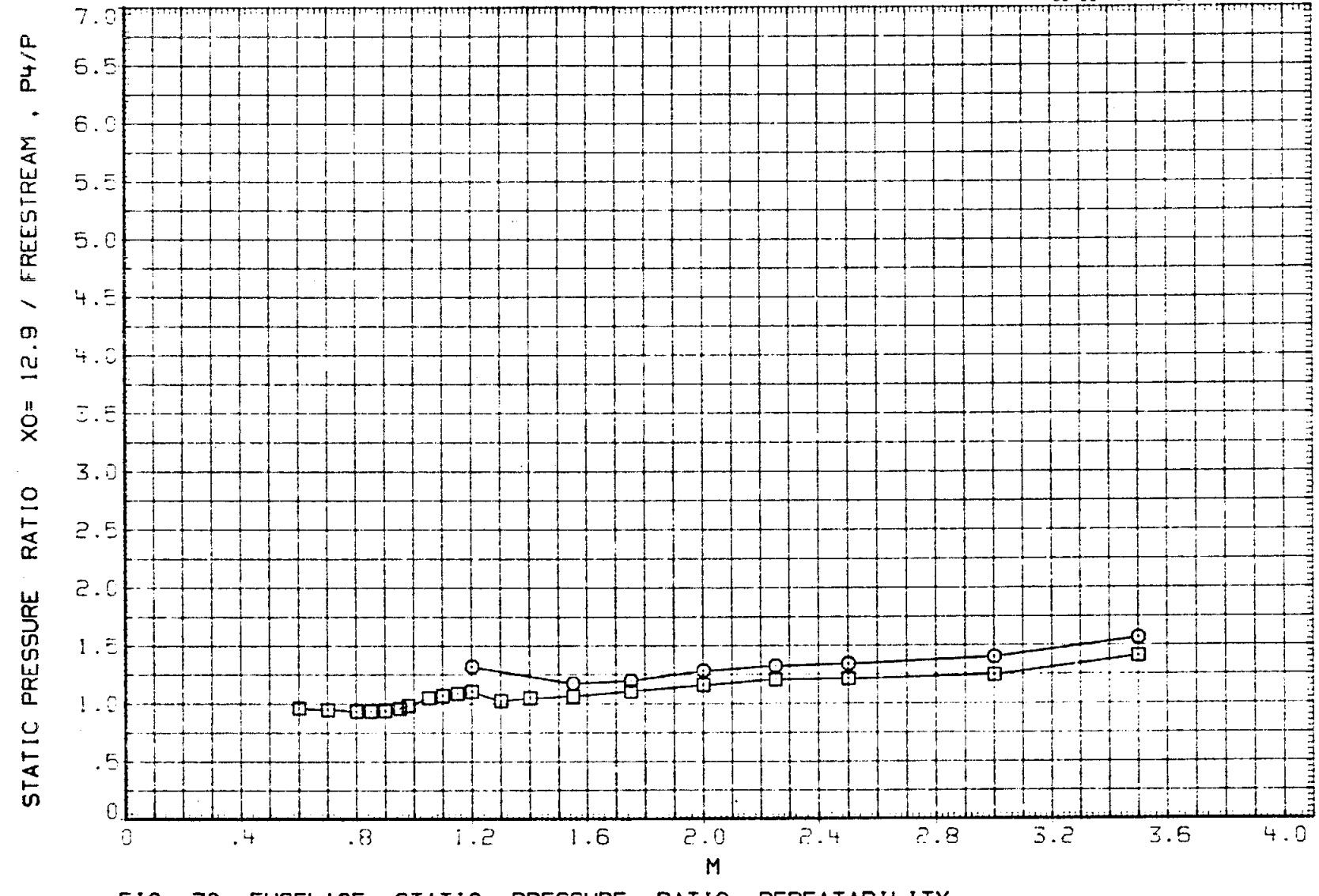


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(B)ALPHA = 6.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
AE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
AE7813	□	ARC 11-97-87-094 OA161 ORBITER	-5.000	.000	.000	-7.170
AE7818	◇	ARC 11-97-87-094 OA161 ORBITER	-5.000	.000	2.500	-7.170
AE7823	△	ARC 11-97-87-094 OA161 ORBITER	-5.000	.000	5.000	-7.170

REFERENCE INFORMATION		
SREF	2630.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

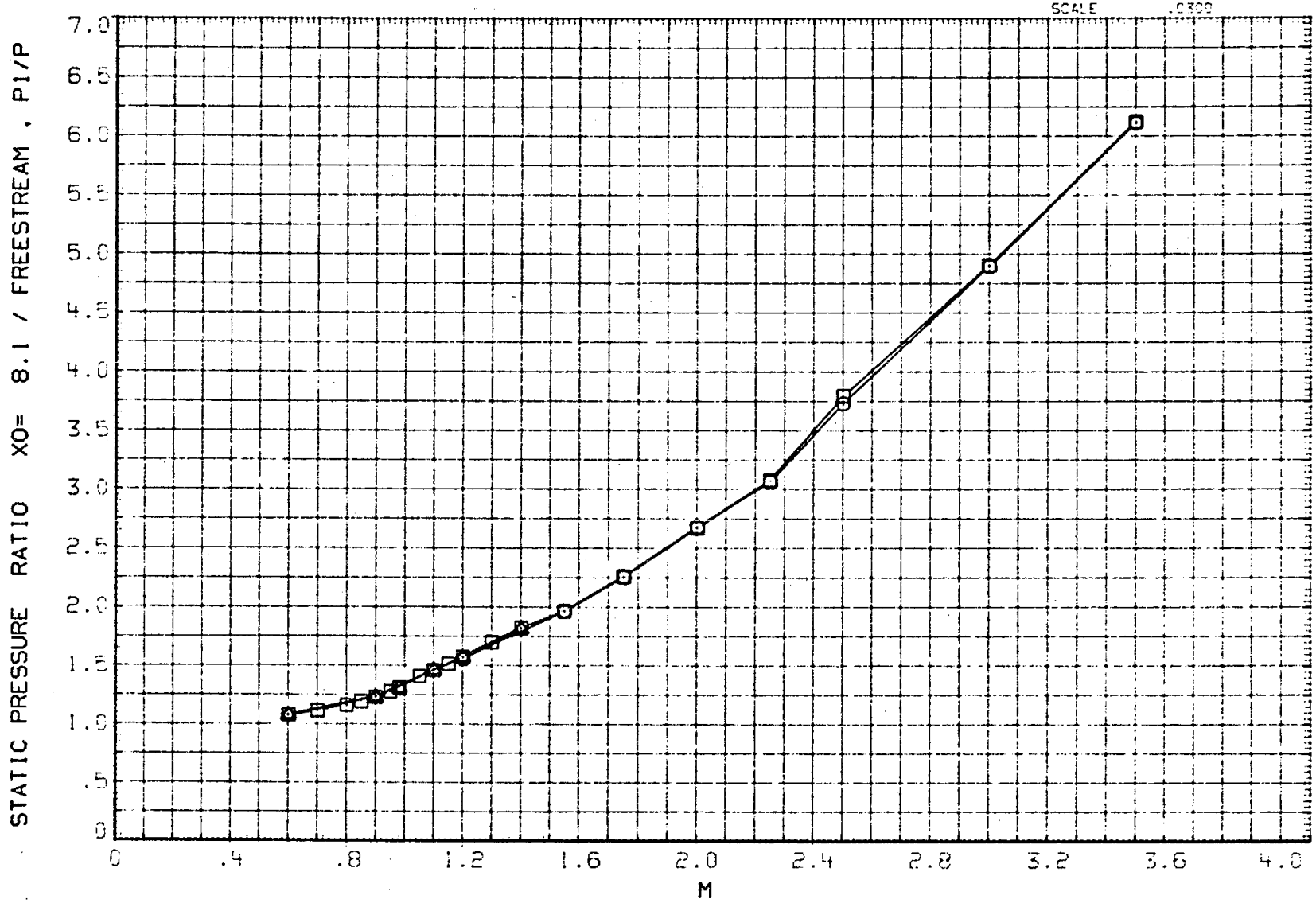


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(C)ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION
AE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES
AE7813	□	ARC 11-97-87-094 OA161 ORBITER
AE7818	◇	ARC 11-97-87-094 OA161 ORBITER
AE7823	△	ARC 11-97-87-094 OA161 ORBITER

BETA	ELEVON	AILRON	BDFLAP
-5.000	.000	.000	-7.170
-5.000	.000	.000	-7.170
-5.000	.000	2.500	-7.170
-5.000	.000	5.000	-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

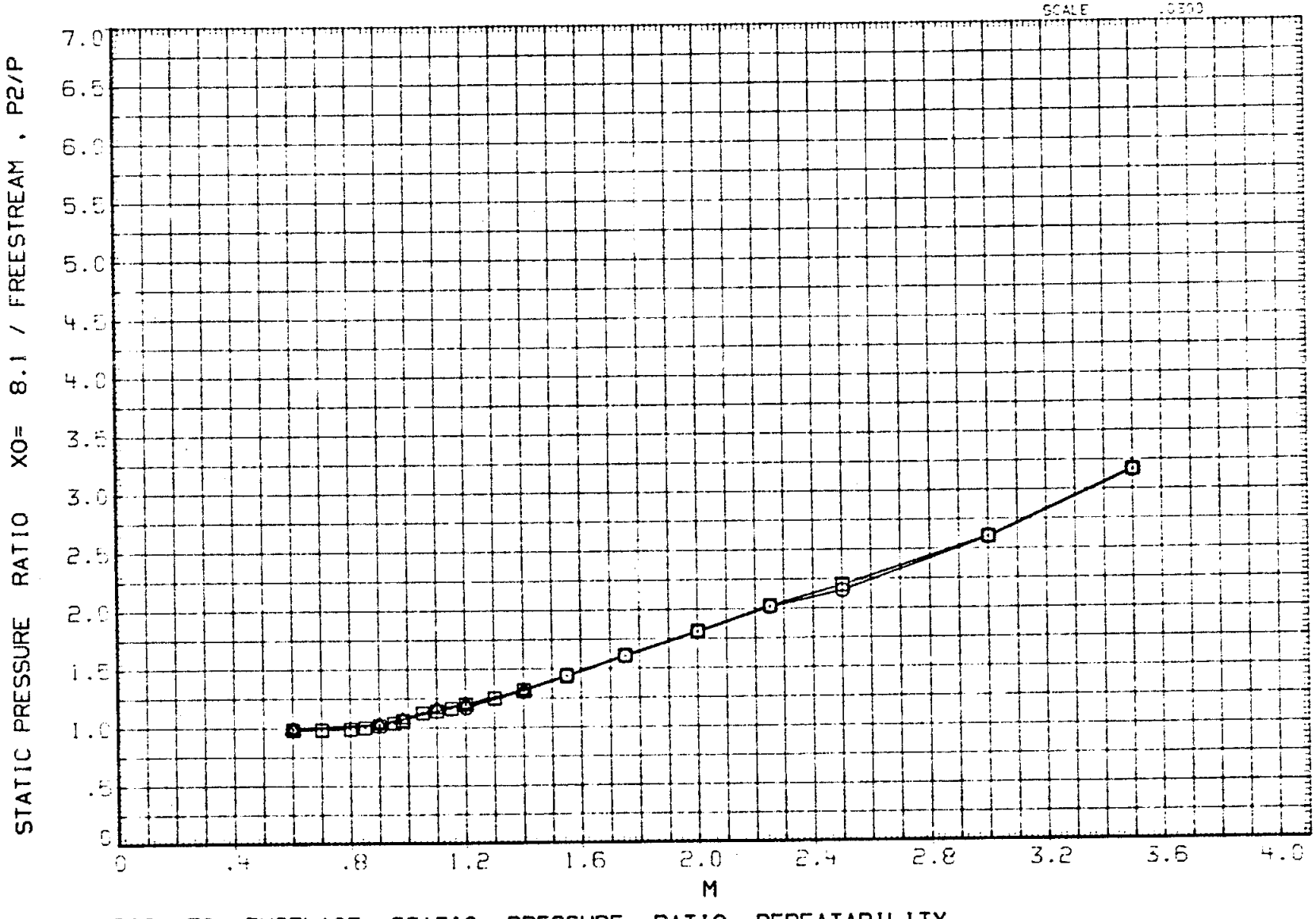


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(C)ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION
AE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES
AE7813	□	ARC 11-97-87-094 OA161 ORBITER
AE7818	◇	ARC 11-97-87-094 OA161 ORBITER
AE7823	△	ARC 11-97-87-094 OA161 ORBITER

BETA	ELEVON	AILRON	BDFLAP
-5.000	.000	.000	-7.170
-5.000	.000	.000	-7.170
-5.000	.000	2.500	-7.170
-5.000	.000	5.000	-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	935.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

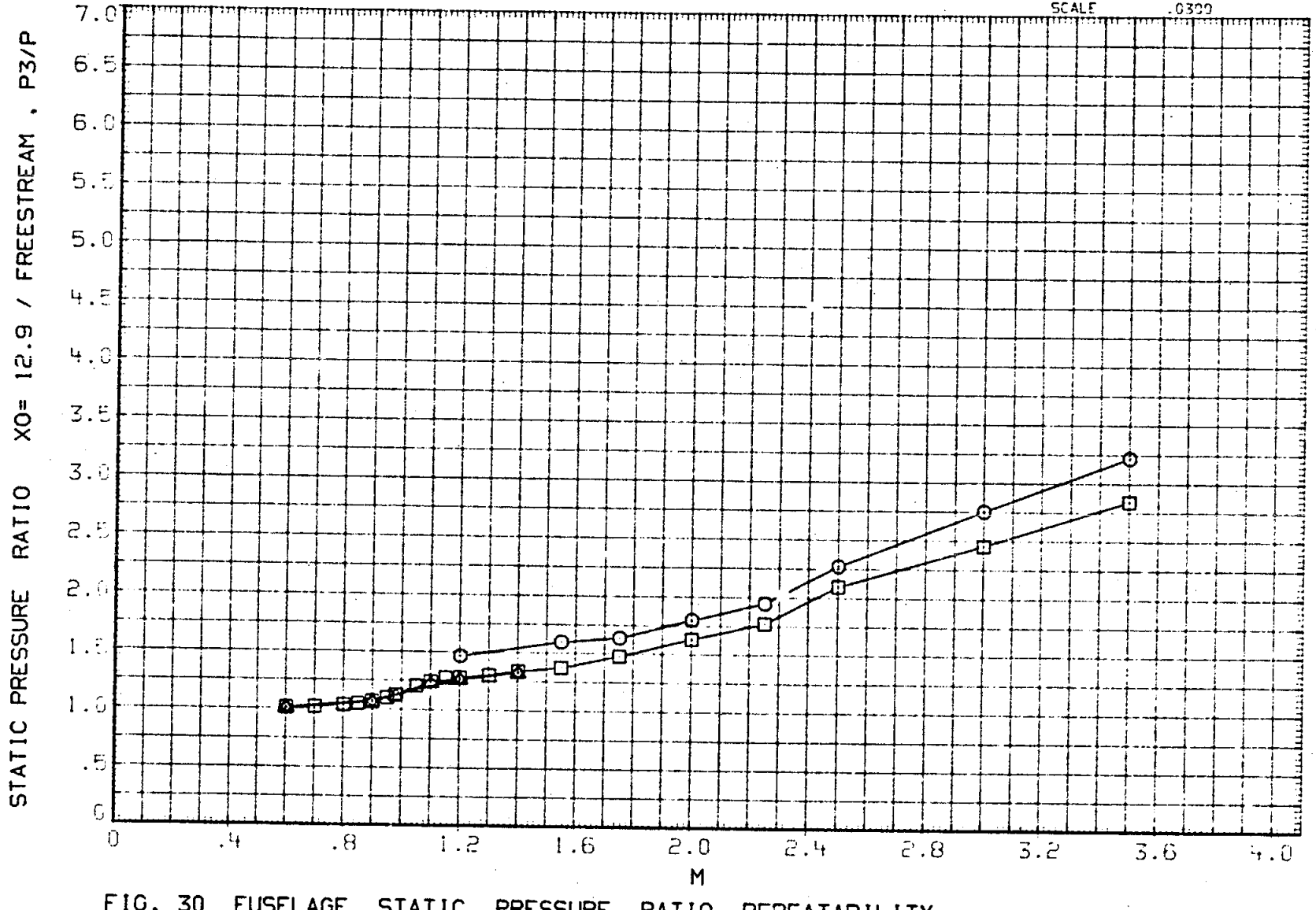


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(C)ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION
AE7B03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES
AE7B13	□	ARC 11-97-87-094 OA161 ORBITER
AE7B18	◇	ARC 11-97-87-094 OA161 ORBITER
AE7B23	△	ARC 11-97-87-094 OA161 ORBITER

BETA	ELEVON	AILRON	BODFLAP
-5.000	.000	.000	-7.170
-5.000	.000	.000	-7.170
-5.000	.000	2.500	-7.170
-5.000	.000	5.000	-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	935.6900	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0500	

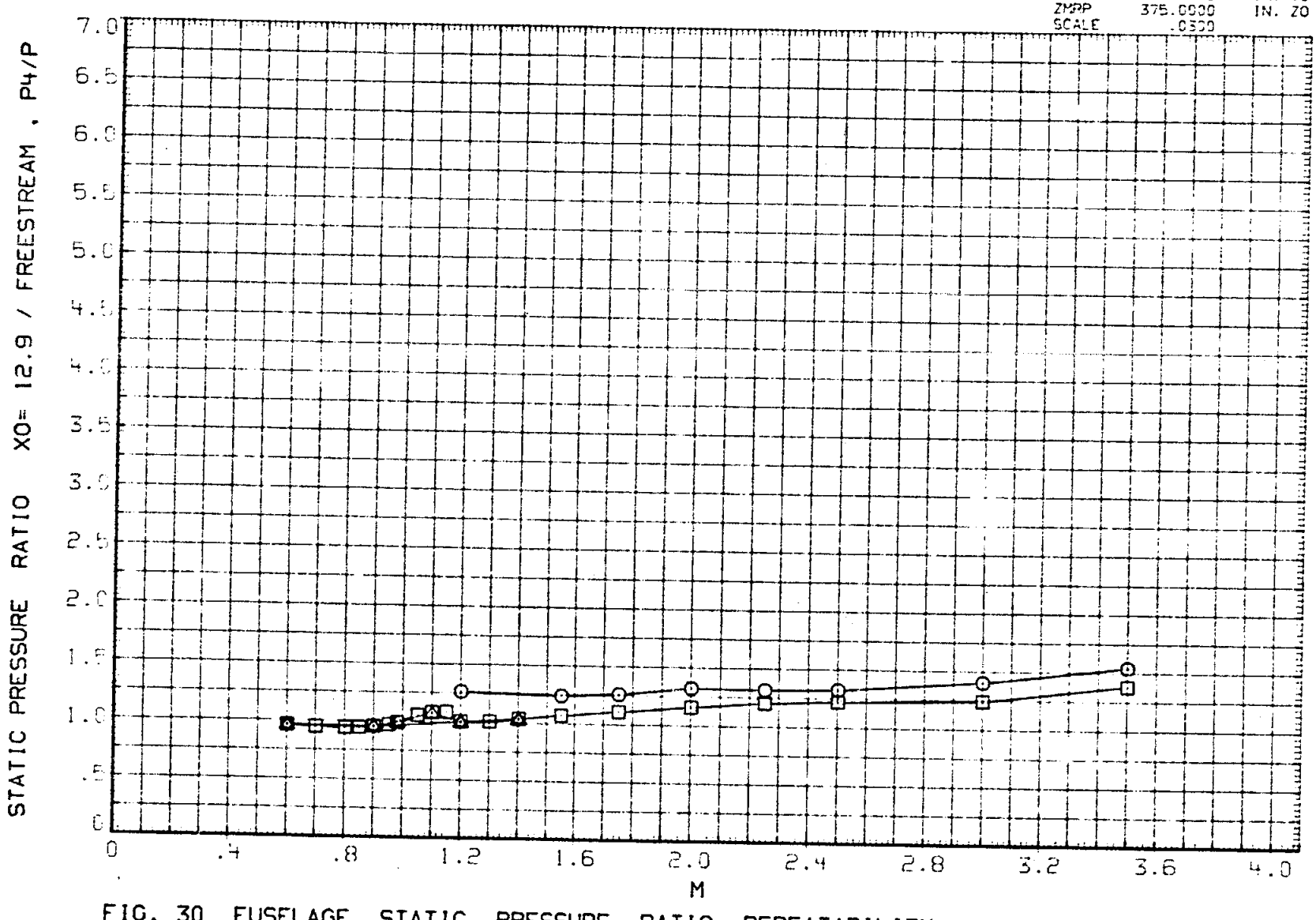


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(C)ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
AE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
AE7813	□	ARC 11-97-87-094 OA161 ORBITER	-5.000	.000	.000	-7.170
AE7818	◇	DATA NOT AVAILABLE	-5.000	.000	2.500	-7.170
AE7823	△	DATA NOT AVAILABLE	-5.000	.000	5.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.5800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

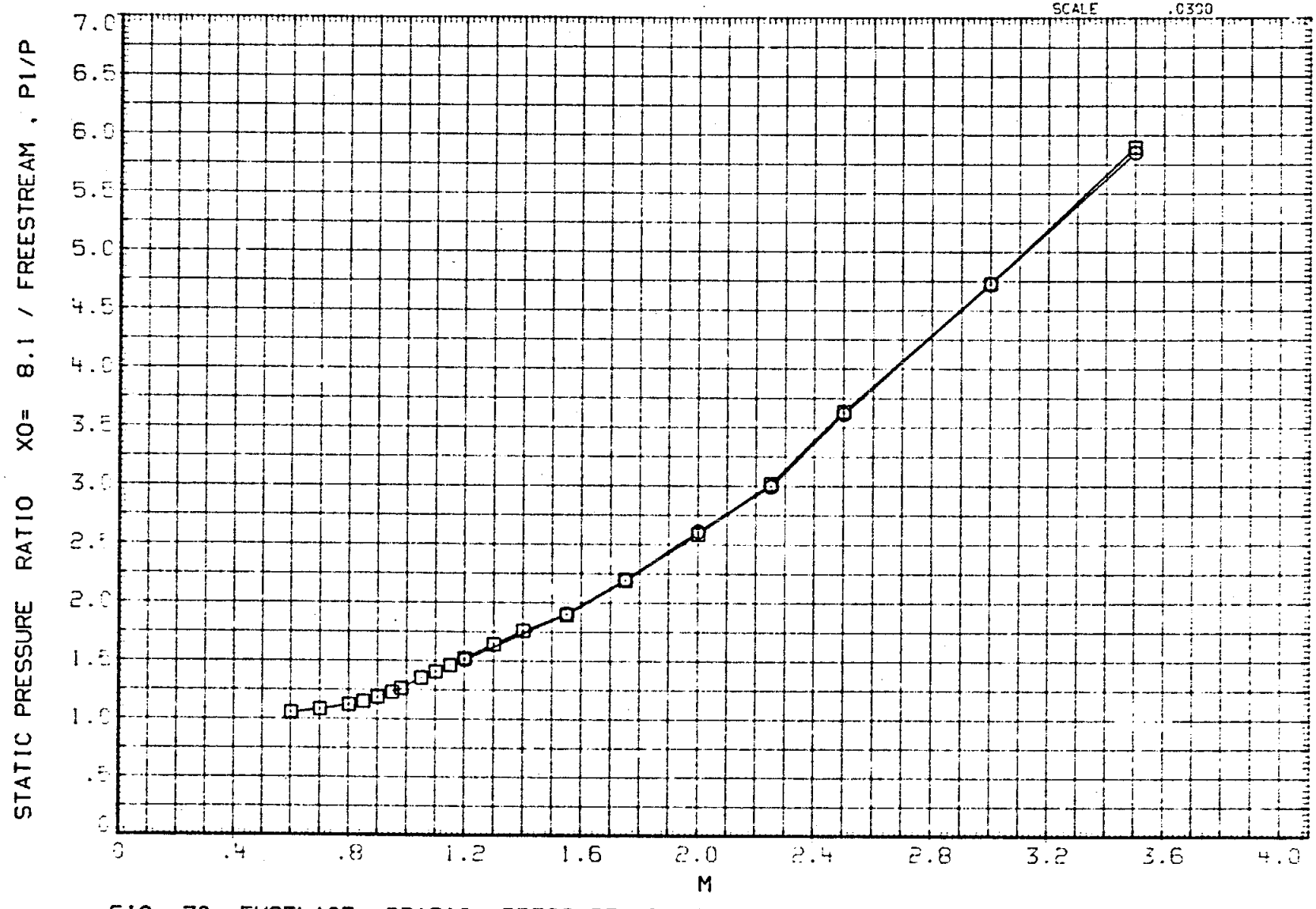


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(D)ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
AE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	-5.000	.000	.000	-7.170
AE7813	□	ARC 11-97-87-094 OA161 ORBITER	-5.000	.000	.000	-7.170
AE7818	◇	DATA NOT AVAILABLE	-5.000	.000	2.500	-7.170
AE7823	⌓	DATA NOT AVAILABLE	-5.000	.000	5.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

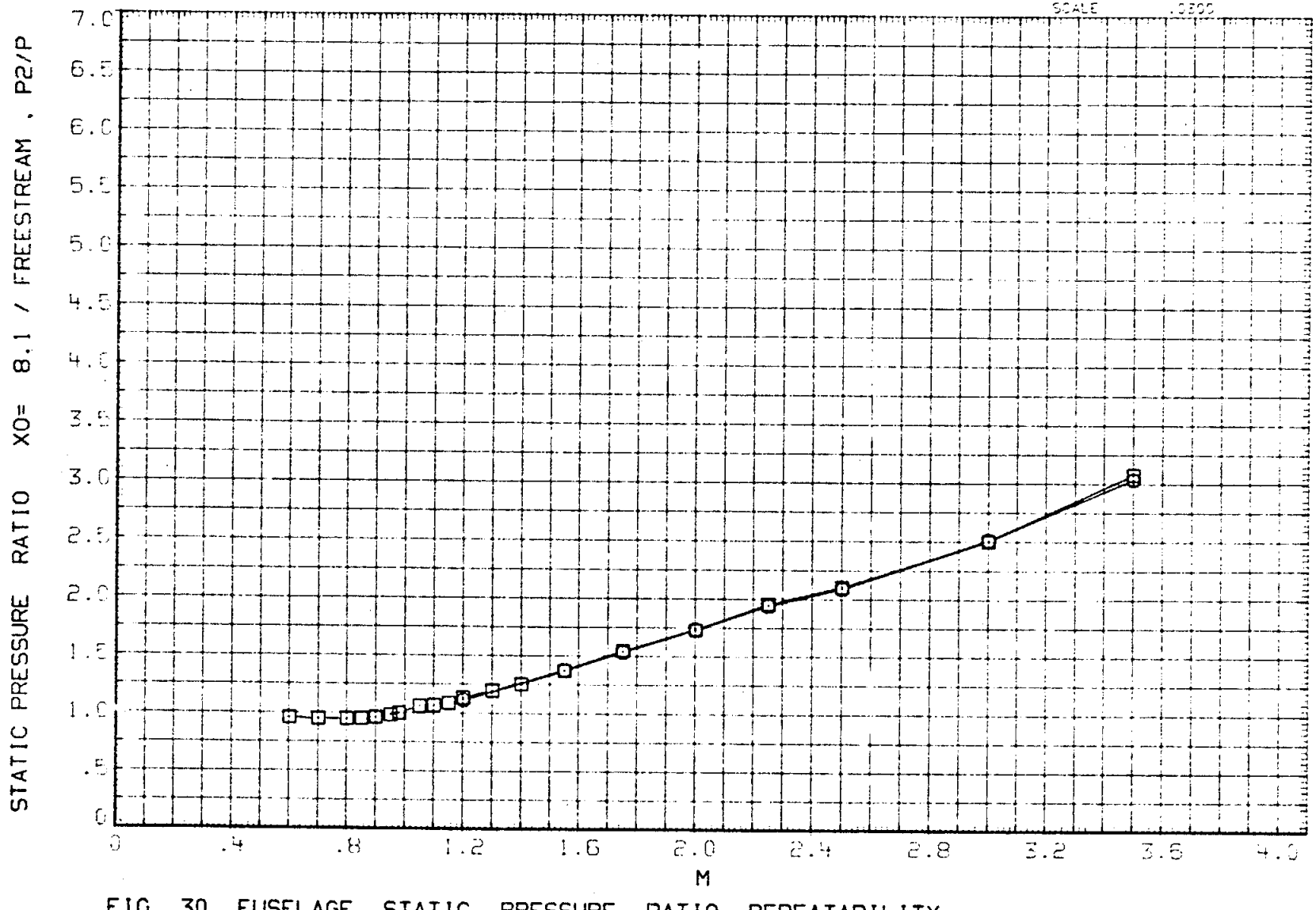


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(D)ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION
AE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES
AE7813	□	ARC 11-97-87-094 OA161 ORBITER
AE7818	◇	DATA NOT AVAILABLE
AE7823	△	DATA NOT AVAILABLE

BETA	ELEVON	AILRON	BDFLAP
-5.000	.000	.000	-7.170
-5.000	.000	.000	-7.170
-5.000	.000	2.500	-7.170
-5.000	.000	5.000	-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	976.6900	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

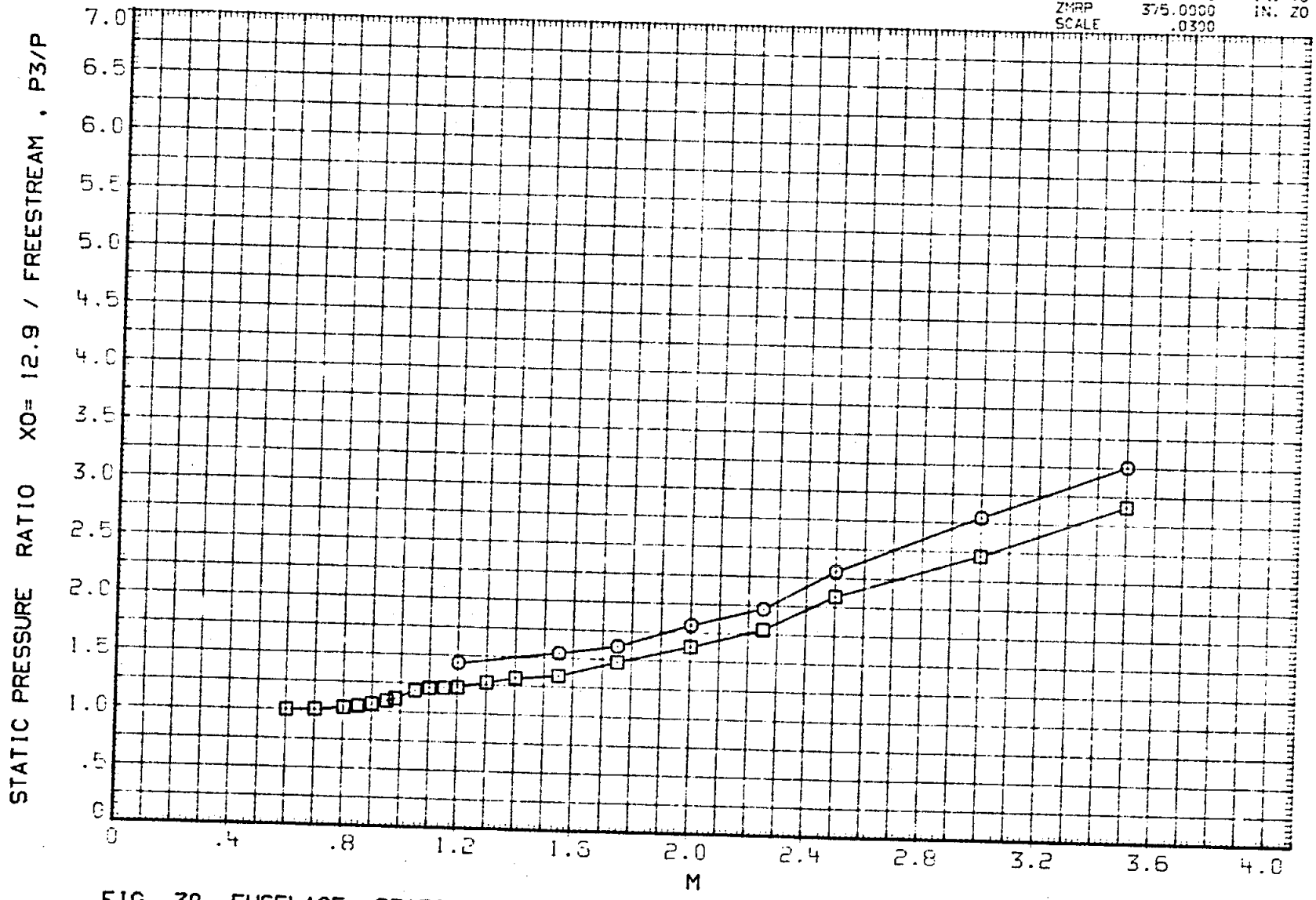


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(D)ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION
AE7B03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES
AE7B13	□	ARC 11-97-87-094 OA161 ORBITER
AE7B18	◇	DATA NOT AVAILABLE
AE7B23	△	DATA NOT AVAILABLE

BETA	ELEVON	AILRON	BDFLAP
-5.000	.000	.000	-7.170
-5.000	.000	.000	-7.170
-5.000	.000	2.500	-7.170
-5.000	.000	5.000	-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

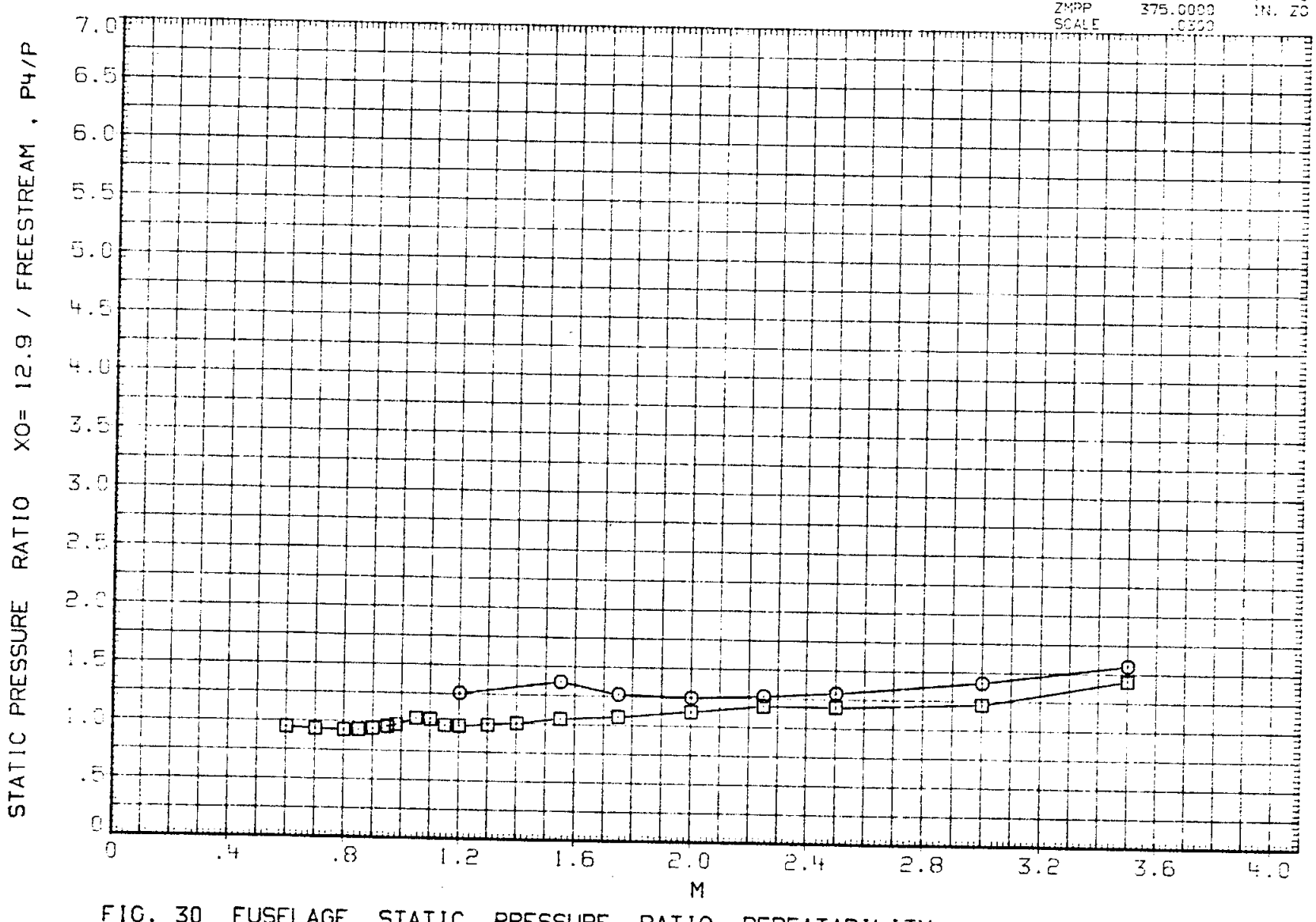


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(D)ALPHA = 18.00

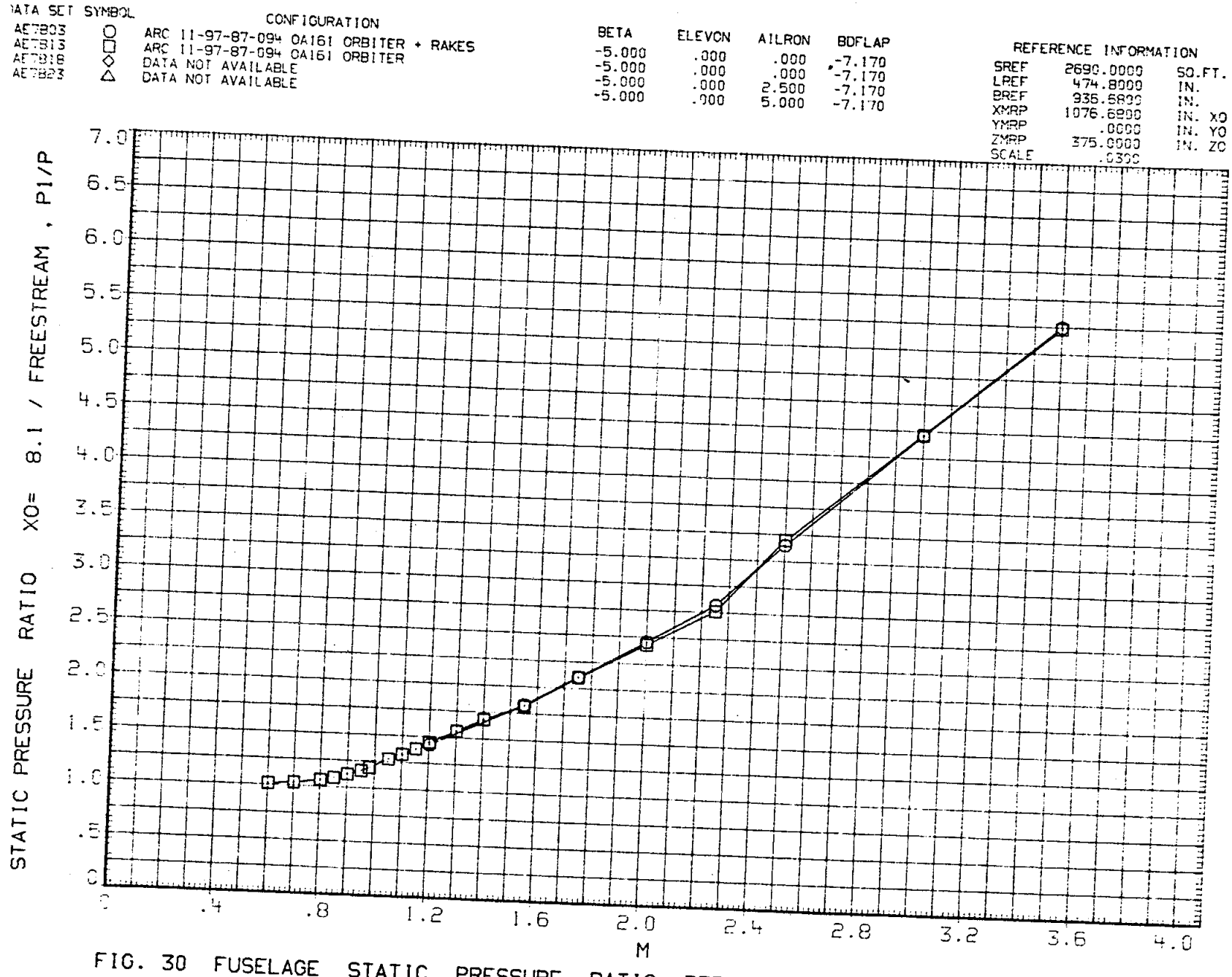


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(E) ALPHA = 24.00

ATA SET	SYMBOL	CONFIGURATION
AE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES
AE7813	□	ARC 11-97-87-094 OA161 ORBITER
AE7818	◇	DATA NOT AVAILABLE
AE7823	△	DATA NOT AVAILABLE

BETA	ELEVON	AILRON	BDFLAP
-5.000	.000	.000	-7.170
-5.000	.000	.000	-7.170
-5.000	.000	2.500	-7.170
-5.000	.000	5.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

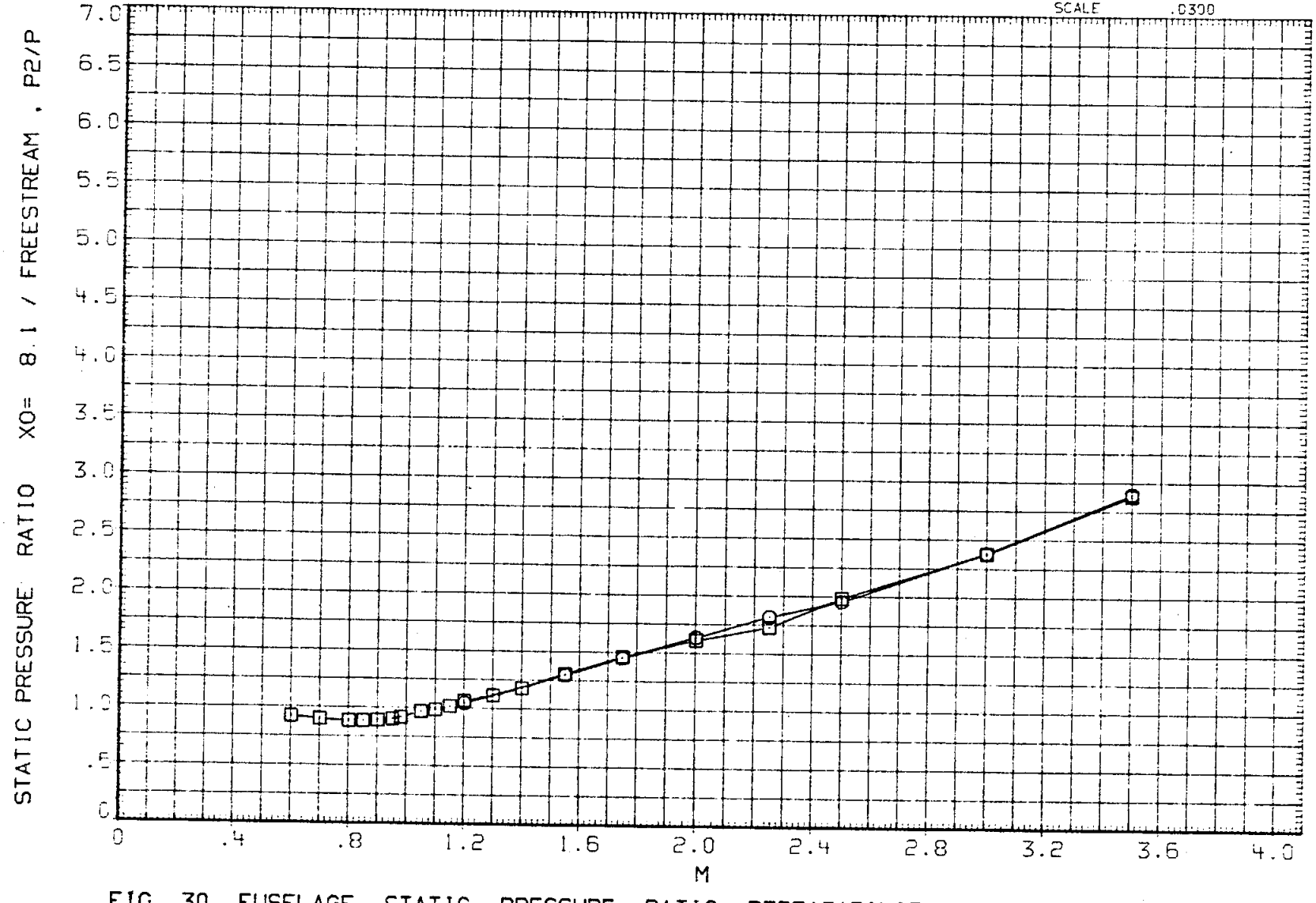


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(E) ALPHA = 24.00

DATA SET	SYMBOL	CONFIGURATION
AE7803	○	ARC 11-97-87-094 OA161 ORBITER + RAKES
AE7813	□	ARC 11-97-87-094 OA161 ORBITER
AE7818	◇	DATA NOT AVAILABLE
AE7823	△	DATA NOT AVAILABLE

BETA	ELEVON	AILRON	BDFLAP
-5.000	.000	.000	-7.170
-5.000	.000	.000	-7.170
-5.000	.000	2.500	-7.170
-5.000	.000	5.000	-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0500	

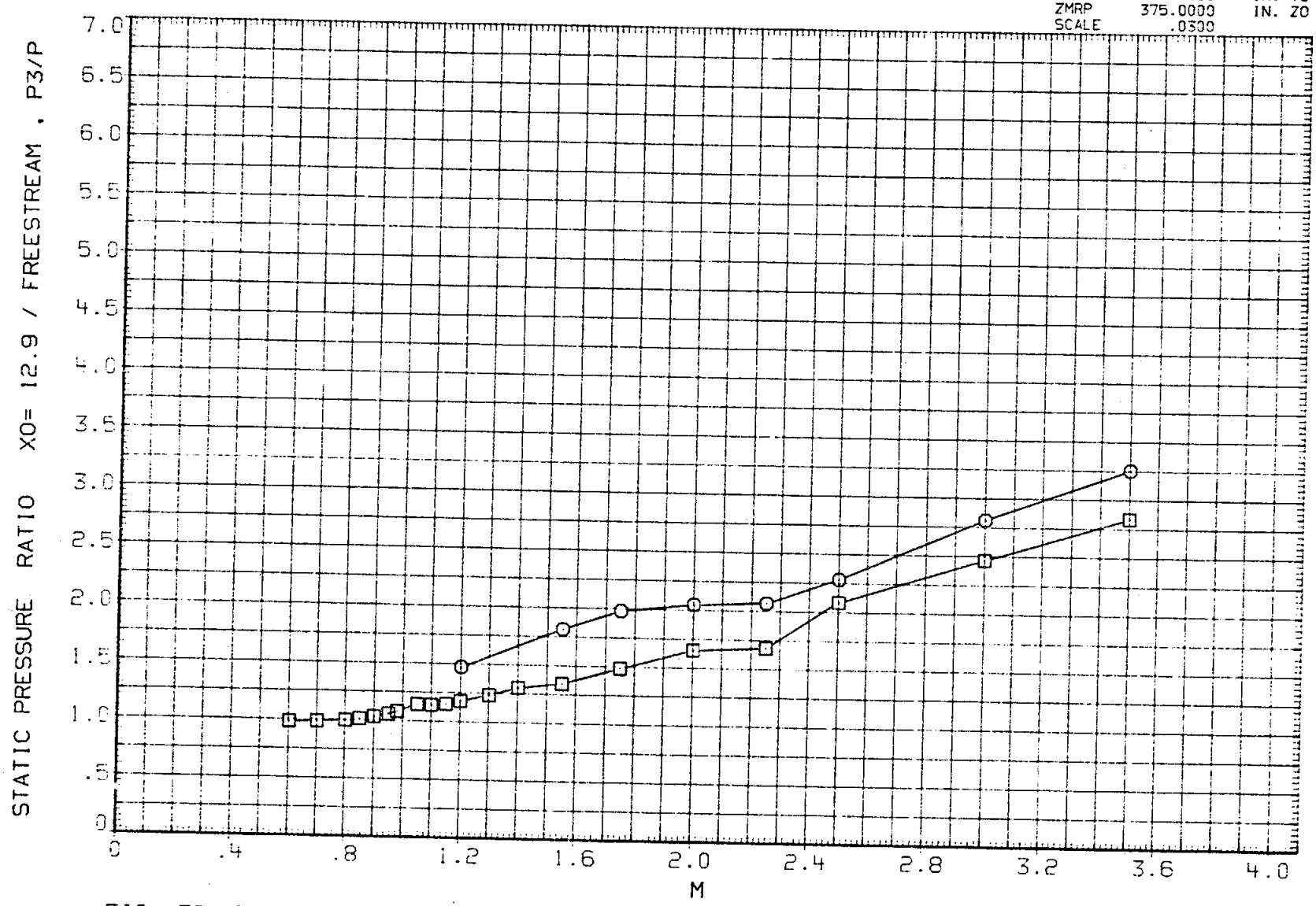


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(E) ALPHA = 24.00

TA SET	SYMBOL	CONFIGURATION
E7B03	○	ARC 11-97-87-094 OA161 ORBITER + RAKES
E7B13	□	ARC 11-97-87-094 OA161 ORBITER
E7B18	◇	DATA NOT AVAILABLE
E7B23	△	DATA NOT AVAILABLE

BETA	ELEVON	AILRON	BDFLAP
-5.000	.000	.000	-7.170
-5.000	.000	.000	-7.170
-5.000	.000	2.500	-7.170
-5.000	.000	5.000	-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

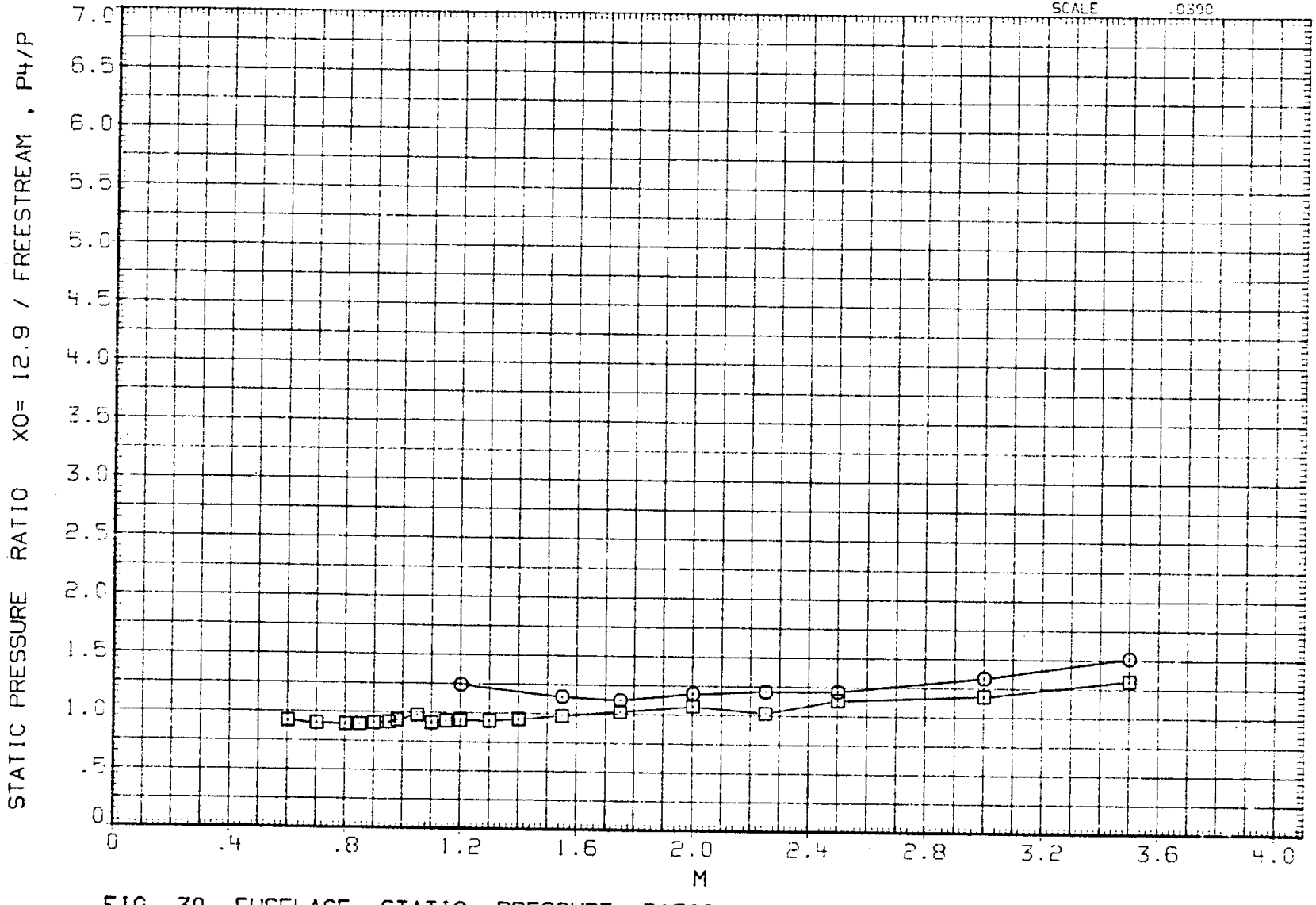


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(E) ALPHA = 24.00

TA SET	SYMBOL	CONFIGURATION	BETA	ELEVCN	AILRON	BDFLAP
07805	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
07815	□	ARC 11-97-87-094 OA161 ORBITER	.000	.000	.000	-7.170
07820	◇	ARC 11-97-87-094 OA161 ORBITER	.000	.000	2.500	-7.170
07825	△	ARC 11-97-87-094 OA161 ORBITER	.000	.000	5.000	-7.170
07801	▷	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170
07802	D	ARC 11-97-87-094 OA161 ORBITER - WING	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

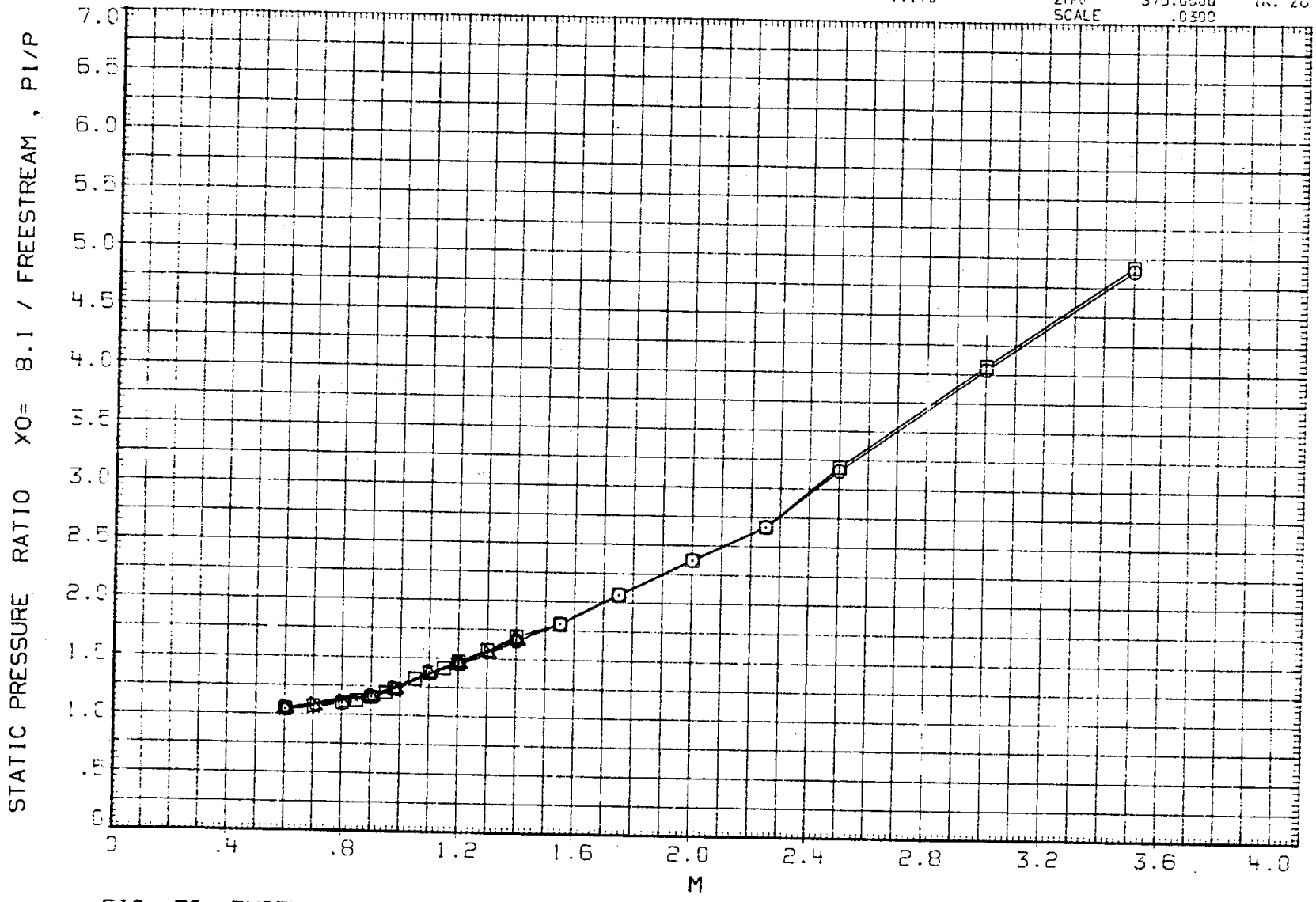


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

A) ALPHA = .00

DATA SET SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
AE7805	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
AE7815	ARC 11-97-87-094 OA161 ORBITER	.000	.000	.000	-7.170
AE7820	ARC 11-97-87-094 OA161 ORBITER	.000	.000	2.500	-7.170
AE7825	ARC 11-97-87-094 OA161 ORBITER	.000	.000	5.000	-7.170
AE7801	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170
AE7802	ARC 11-97-87-094 OA161 ORBITER - WING	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	935.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

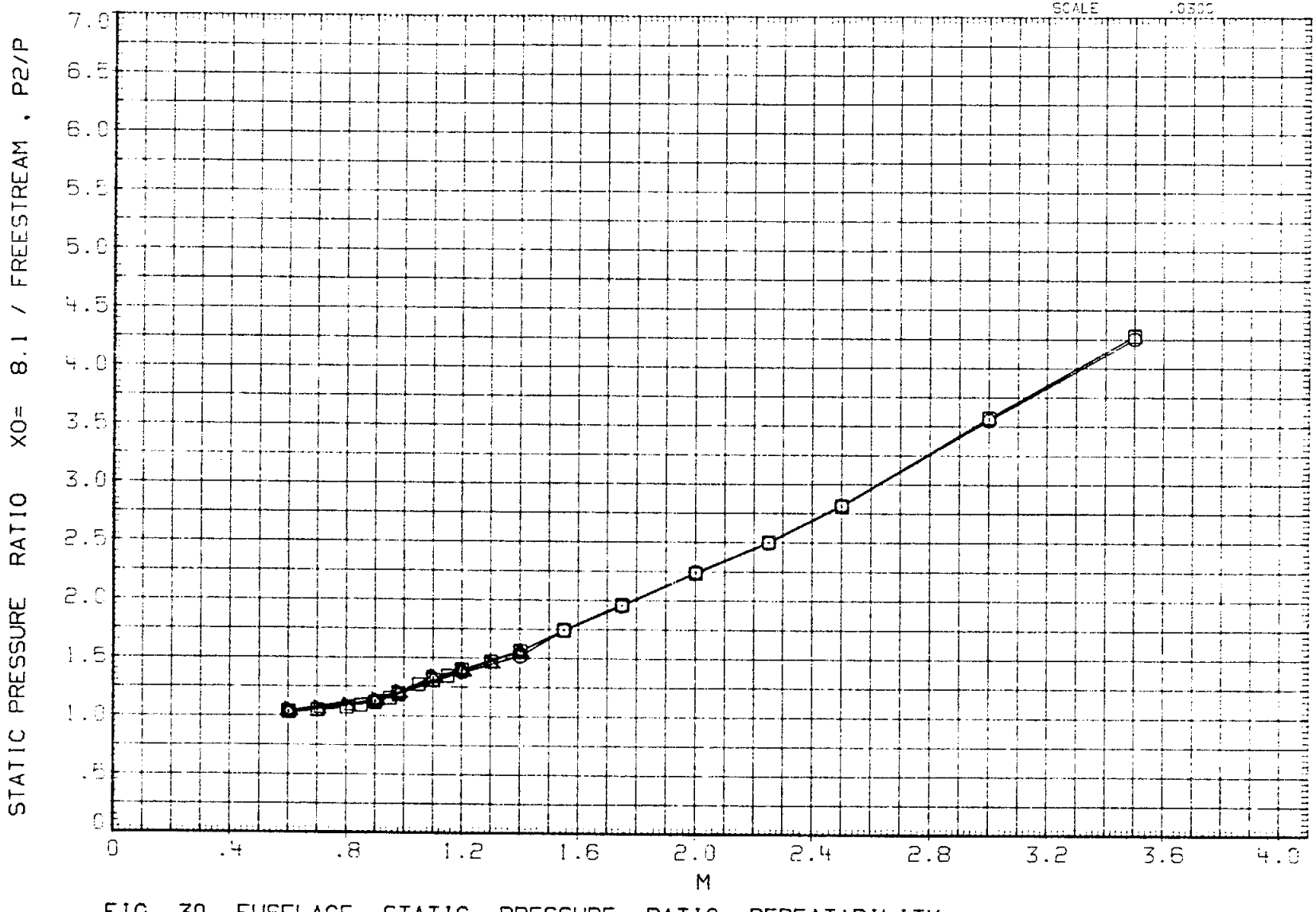


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(A)ALPHA = .00

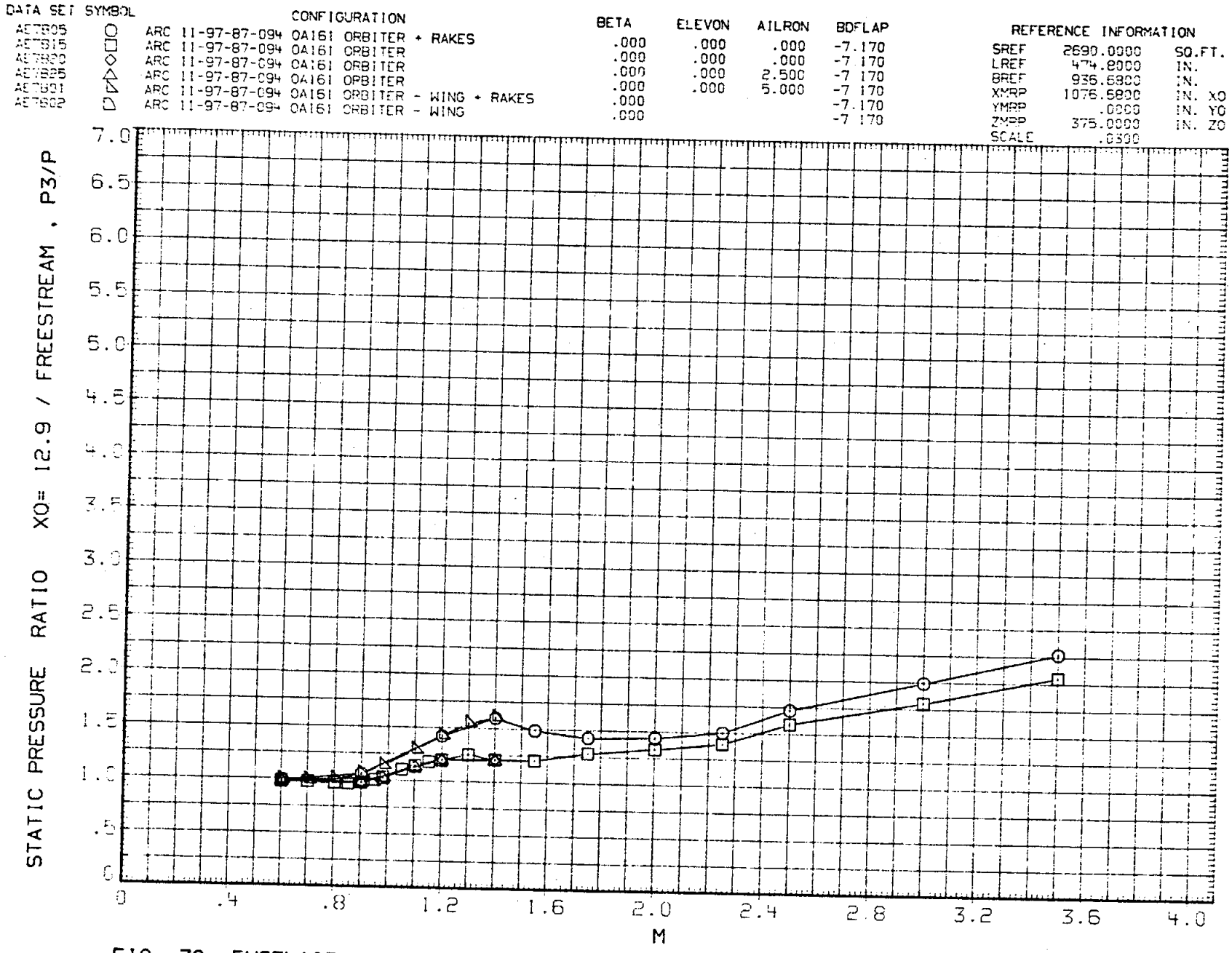


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(A) ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
A57805	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
A57815	□	ARC 11-97-87-094 OA161 ORBITER	.000	.000	.000	-7.170
A57803	◇	ARC 11-97-87-094 OA161 ORBITER	.000	.000	2.500	-7.170
A57835	△	ARC 11-97-87-094 OA161 ORBITER	.000	.000	5.000	-7.170
A57801	▽	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170
A57809	⊡	ARC 11-97-87-094 OA161 ORBITER - WING	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	935.6800	IN.
XMRP	1076.6250	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

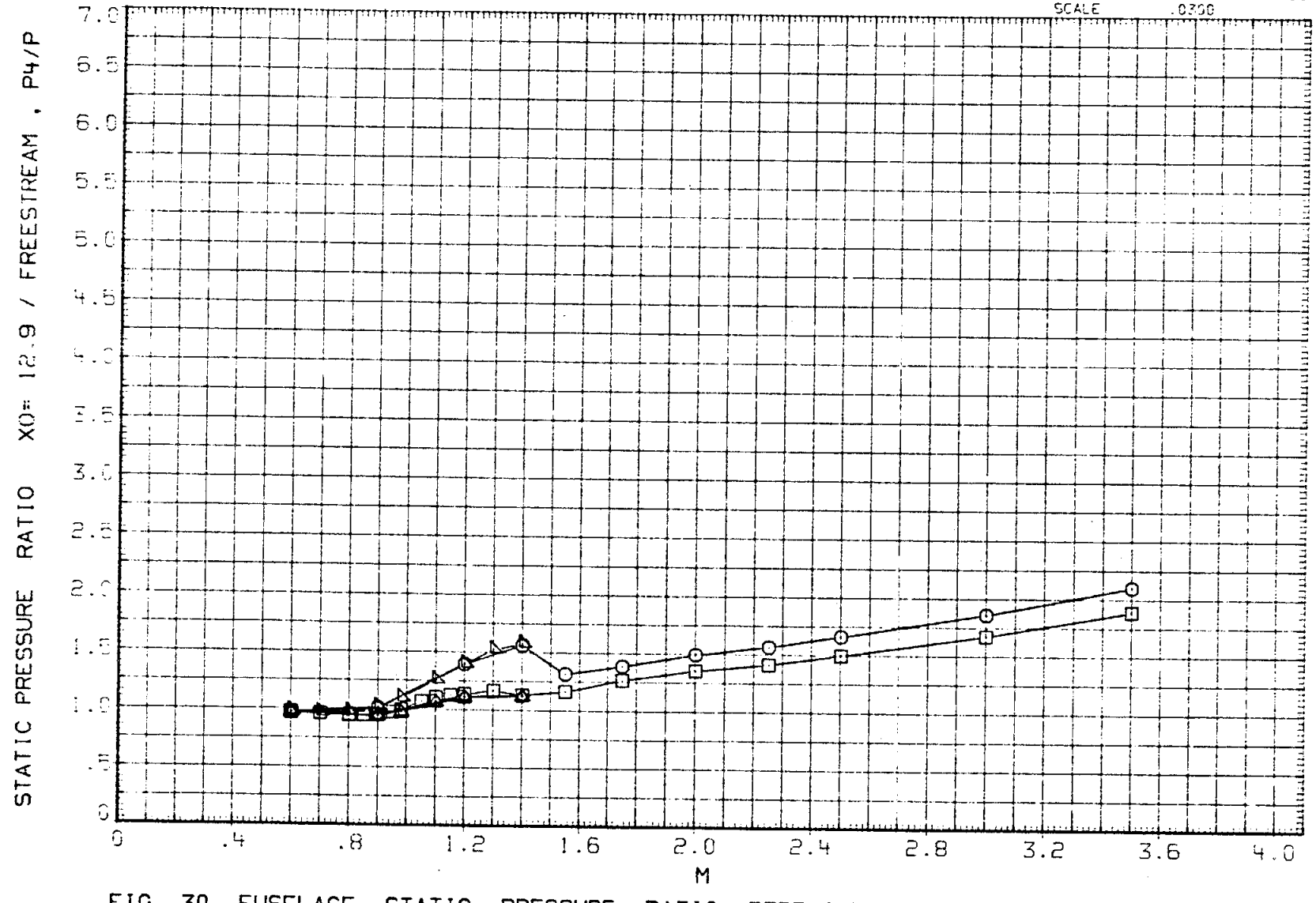


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(A) ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION
AE7B05	○	ARC 11-97-87-094 0A161 ORBITER + RAKES
AE7B15	□	ARC 11-97-87-094 0A161 ORBITER
AE7B20	◇	DATA NOT AVAILABLE
AE7B25	△	DATA NOT AVAILABLE
AE7B01	▽	DATA NOT AVAILABLE
AE7B02	D	DATA NOT AVAILABLE

BETA	ELEVON	AILRON	BDFLAP
.000	.000	.000	-7.170
.000	.000	.000	-7.170
.000	.000	2.500	-7.170
.000	.000	5.000	-7.170
.000			-7.170
.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

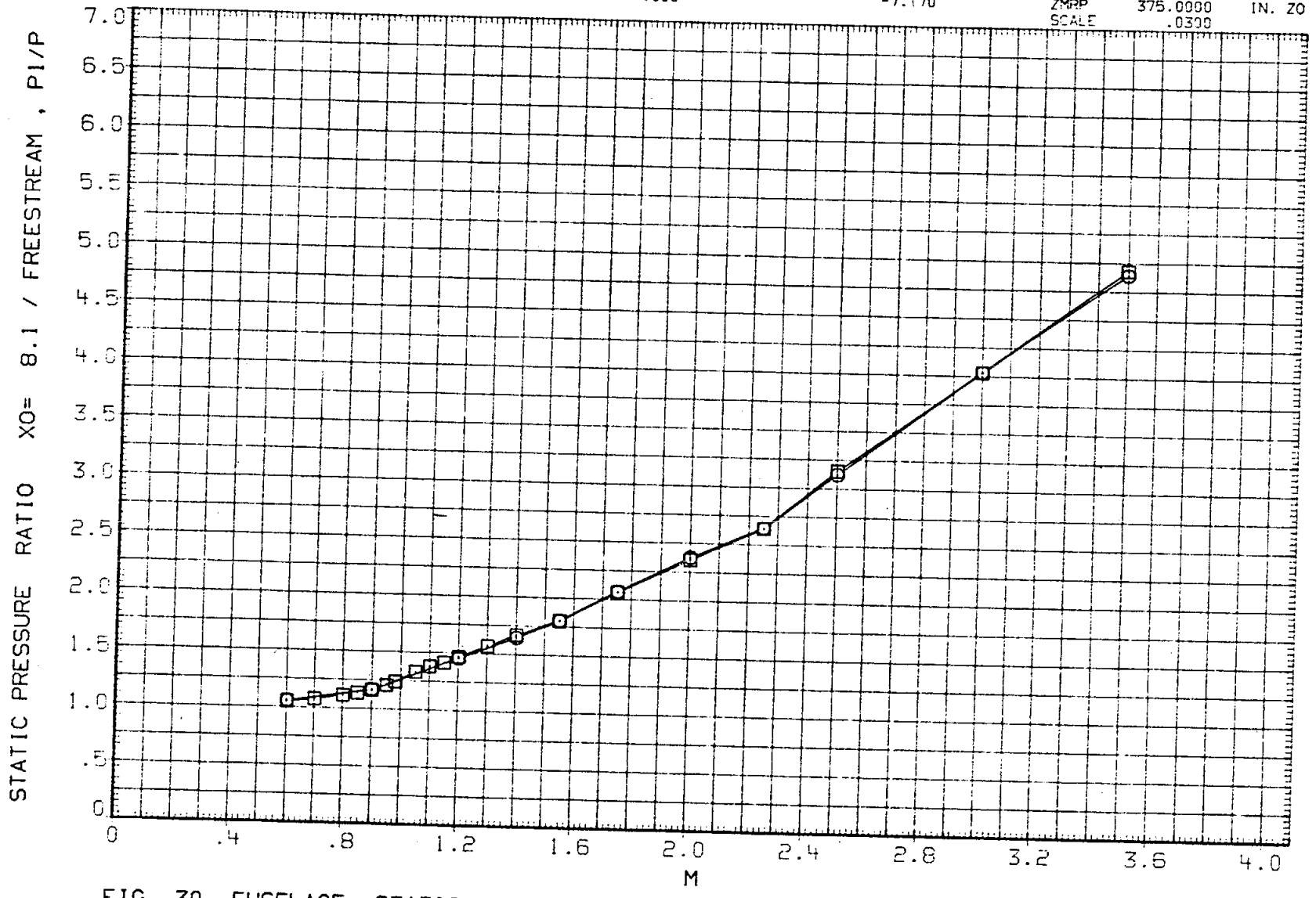


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(B) ALPHA = 6.00

DATA SET	SYMBOL	CONFIGURATION
AE7805	○	ARC 11-97-87-094 OA161 ORBITER + RAKES
AE7815	□	ARC 11-97-87-094 OA161 ORBITER
AE7820	◇	DATA NOT AVAILABLE
AE7825	△	DATA NOT AVAILABLE
AE7801	▷	DATA NOT AVAILABLE
AE7802	D	DATA NOT AVAILABLE

BETA	ELEVON	AILRON	BDFLAP
.000	.000	.000	-7.170
.000	.000	.000	-7.170
.000	.000	2.500	-7.170
.000	.000	5.000	-7.170
.000			-7.170
.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

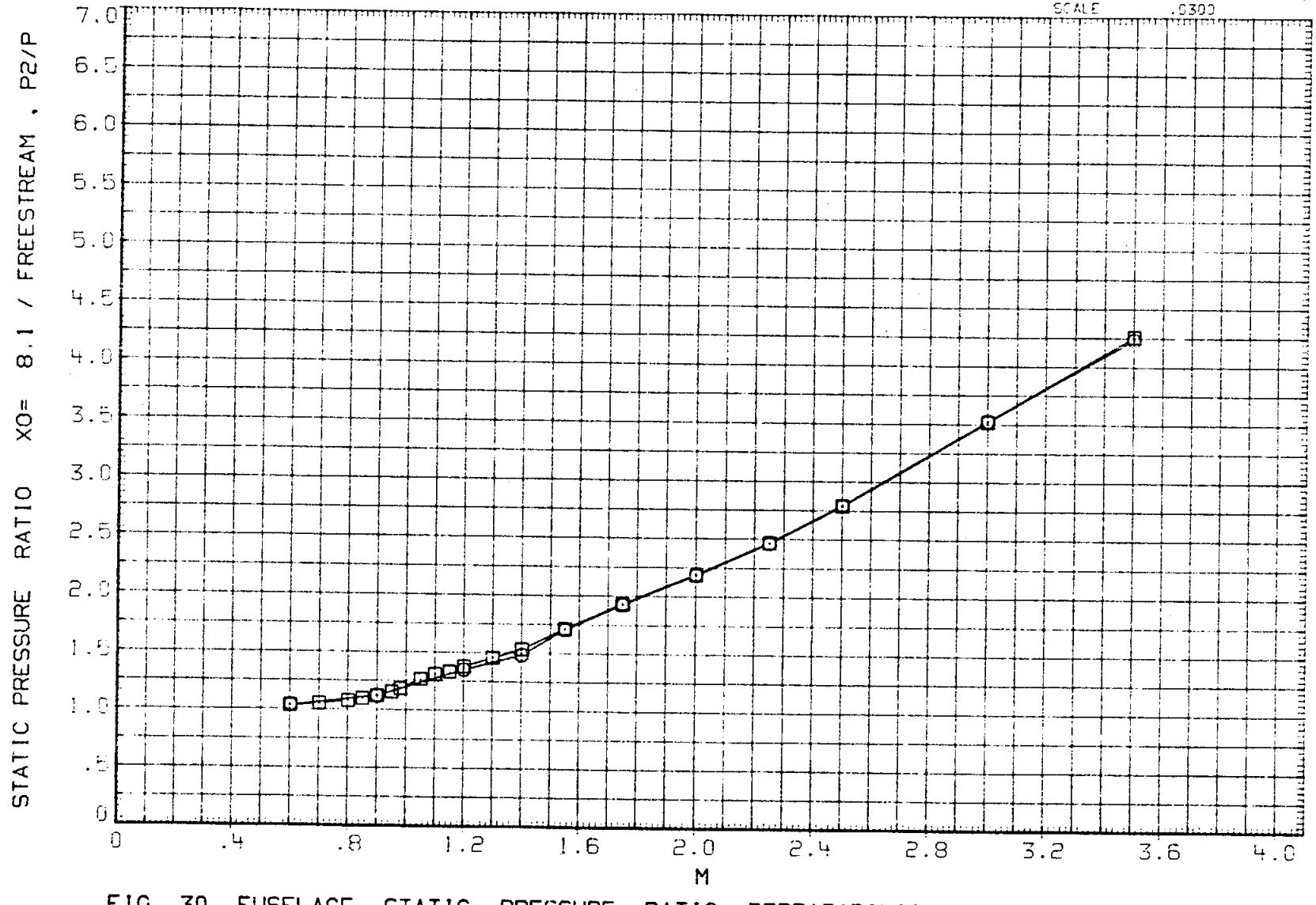


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(B) ALPHA = 6.00

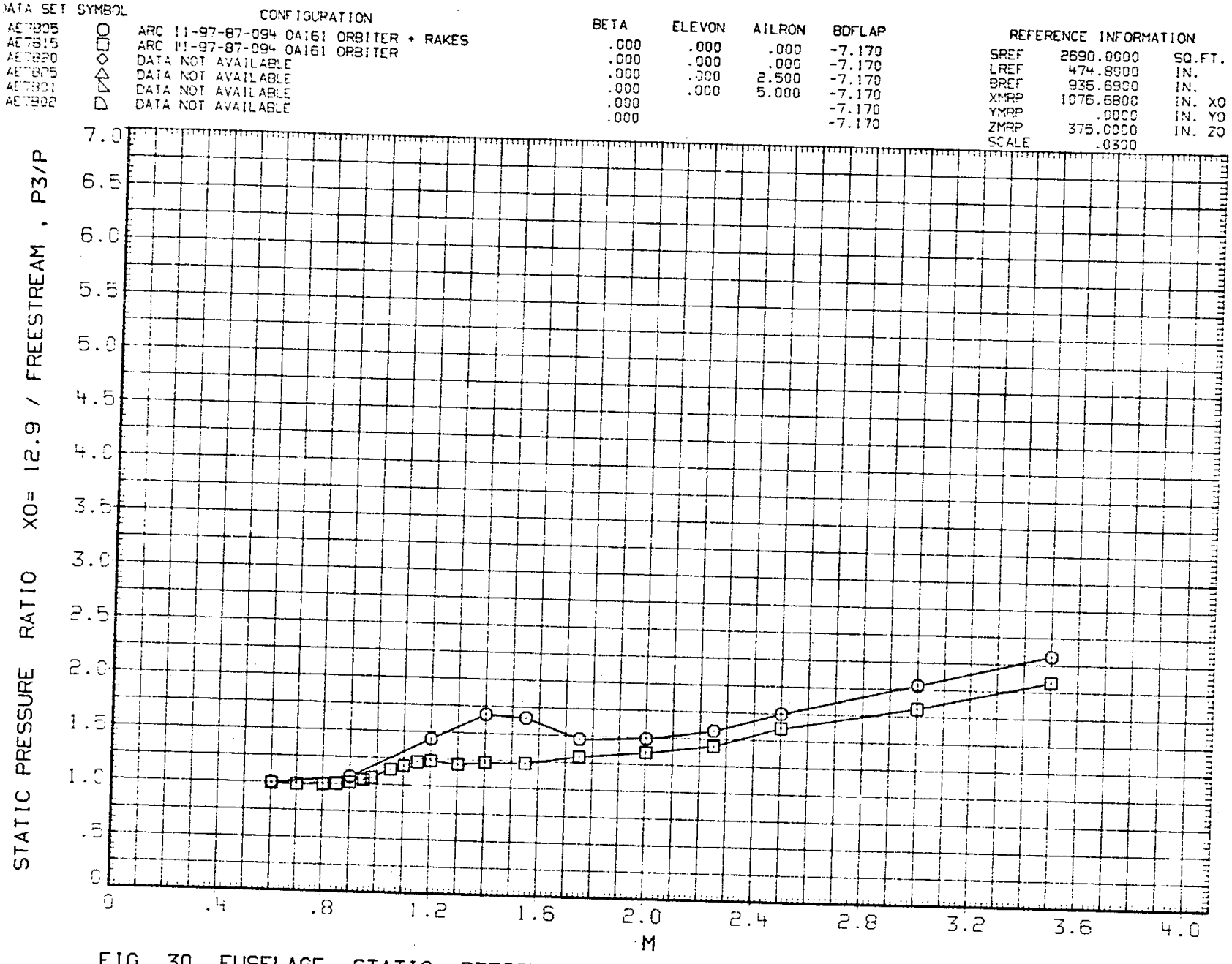


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(B) ALPHA = 6.00

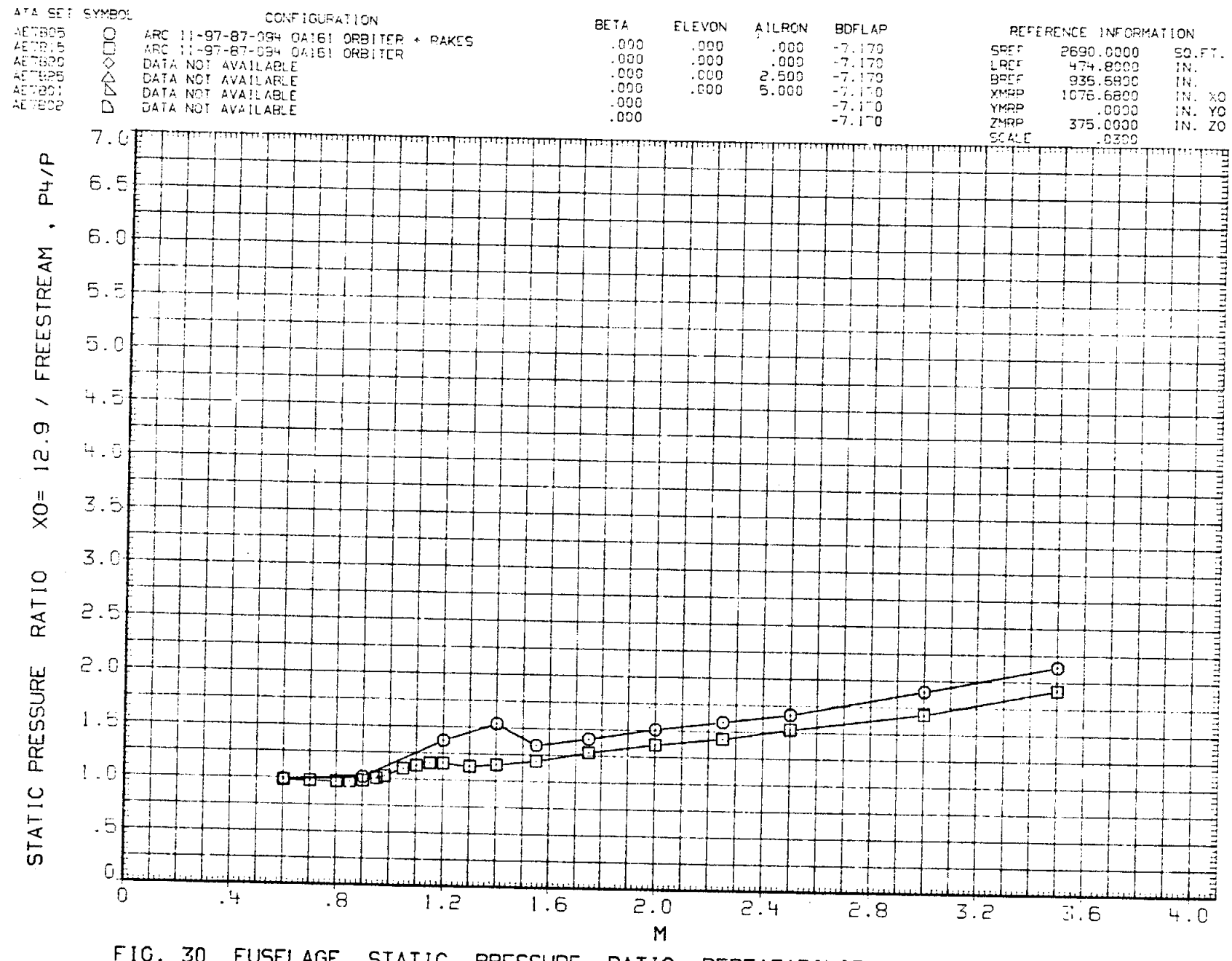


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(B) ALPHA = 6.00

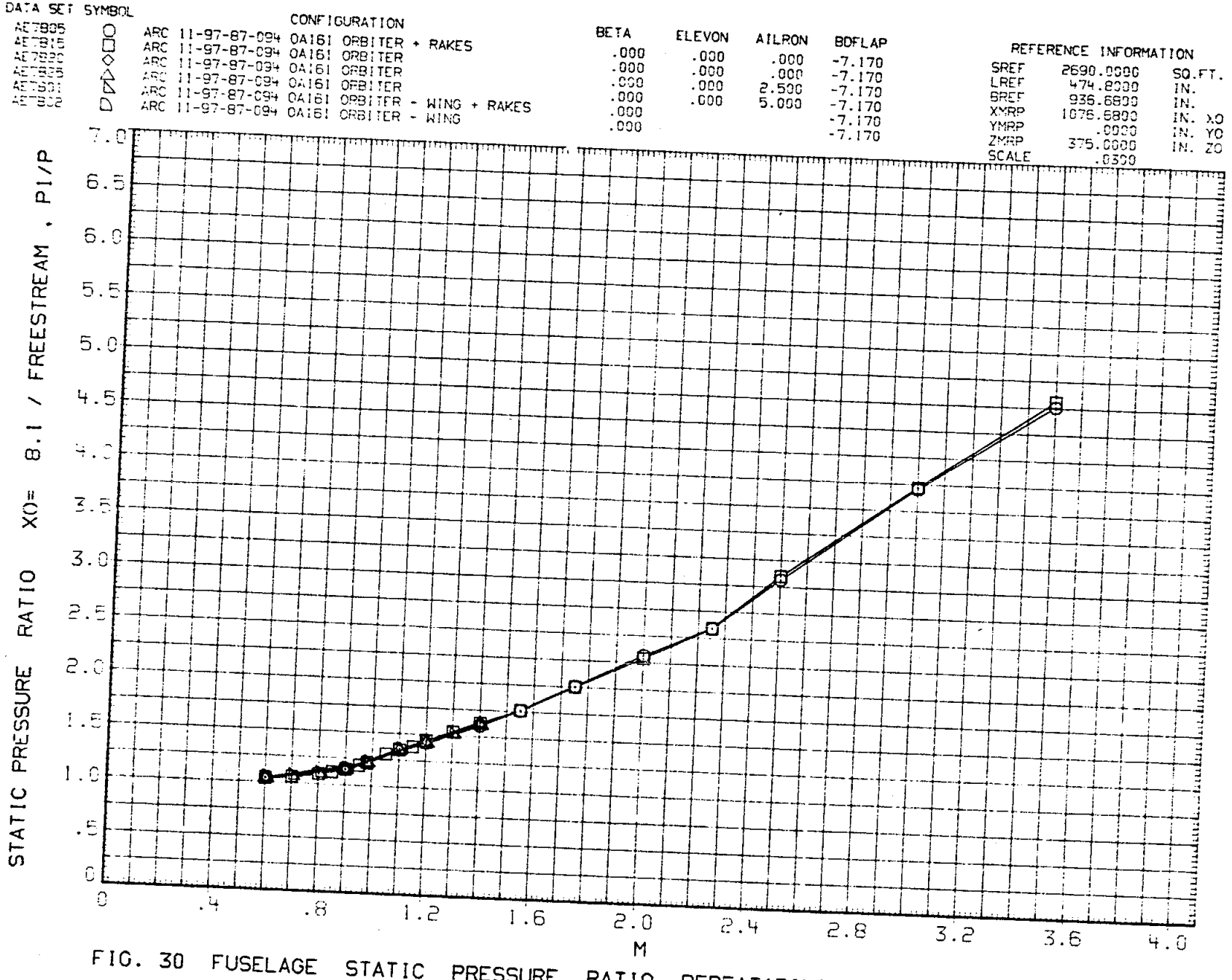


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(C)ALPHA = 12.00

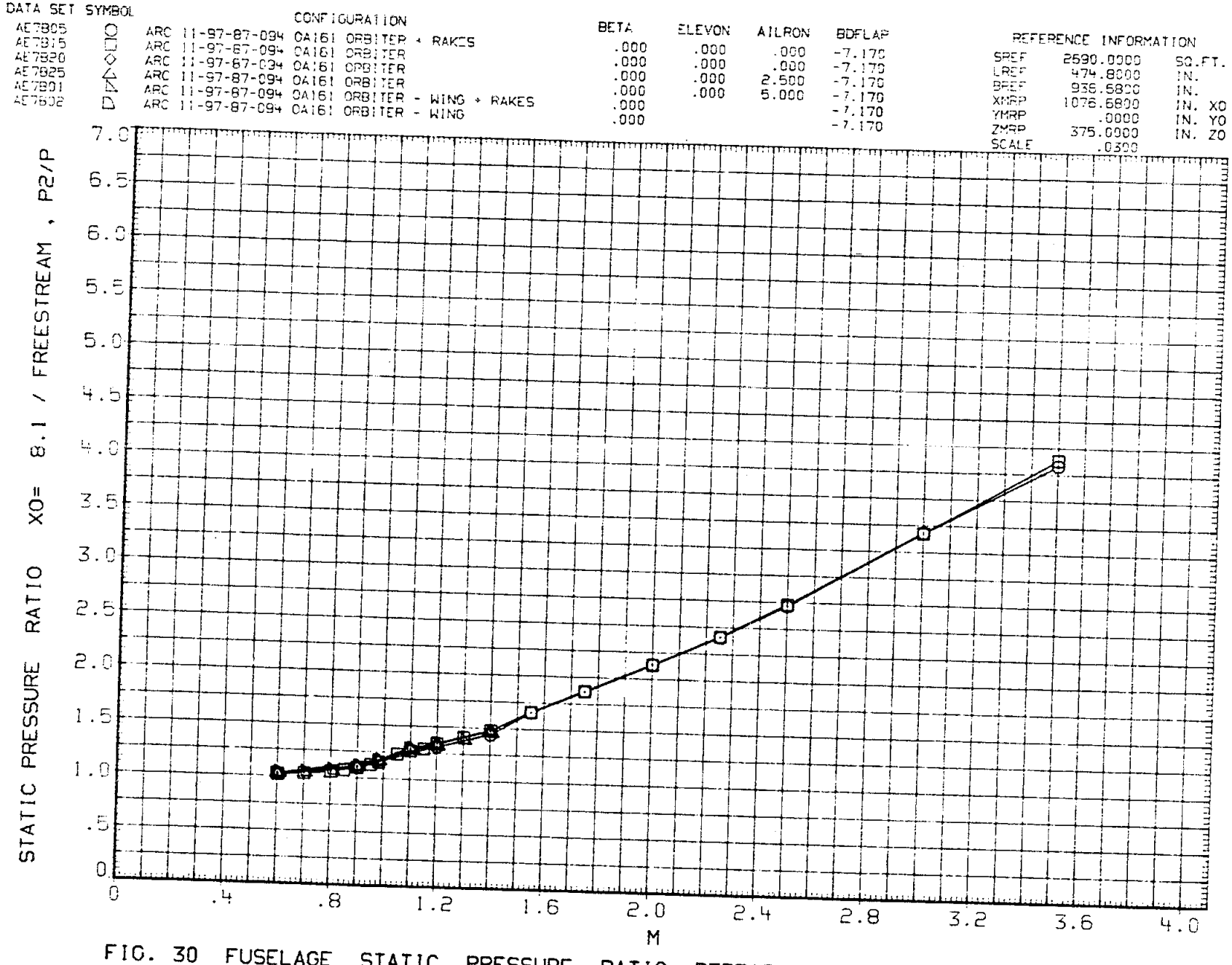


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(C) ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
AE7825	○	ARC 11-97-87-094 0A161 ORBITER + RAKES	.000	.000	.000	-7.170
AE7815	□	ARC 11-97-87-094 0A161 ORBITER	.000	.000	.000	-7.170
AE7826	◇	ARC 11-97-87-094 0A161 ORBITER	.000	.000	2.500	-7.170
AE7825	△	ARC 11-97-87-094 0A161 ORBITER	.000	.000	5.000	-7.170
AE7801	▽	ARC 11-97-87-094 0A161 ORBITER - WING + RAKES	.000			-7.170
AE7802	D	ARC 11-97-87-094 0A161 ORBITER - WING	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1075.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

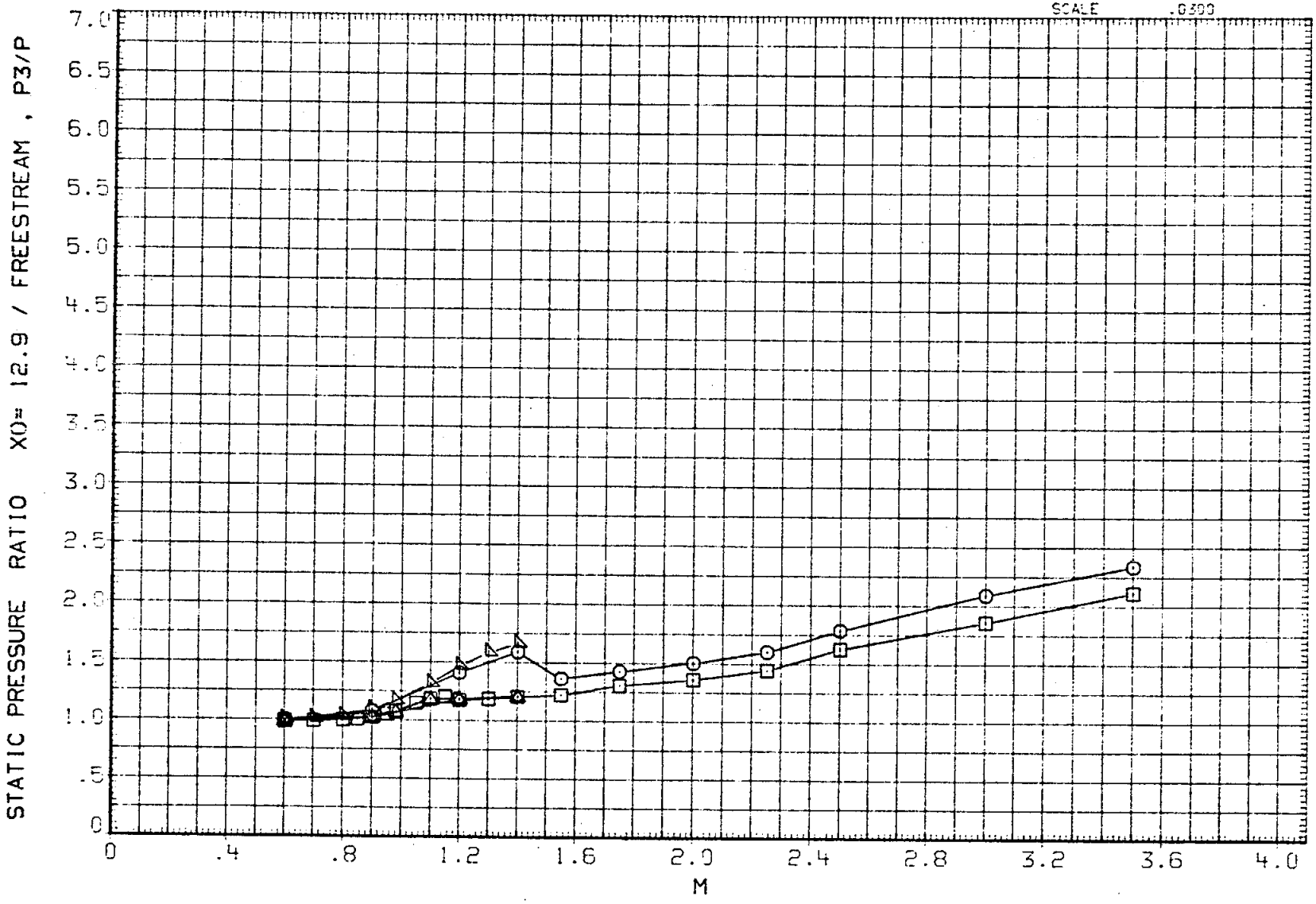


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(C)ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
AE7805	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
AE7815	□	ARC 11-97-87-094 OA161 ORBITER	.000	.000	.000	-7.170
AE7820	◇	ARC 11-97-87-094 OA161 ORBITER	.000	.000	2.500	-7.170
AE7825	△	ARC 11-97-87-094 OA161 ORBITER	.000	.000	5.000	-7.170
AE7801	▷	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170
AE7802	□	ARC 11-97-87-094 OA161 ORBITER - WING	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.5800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

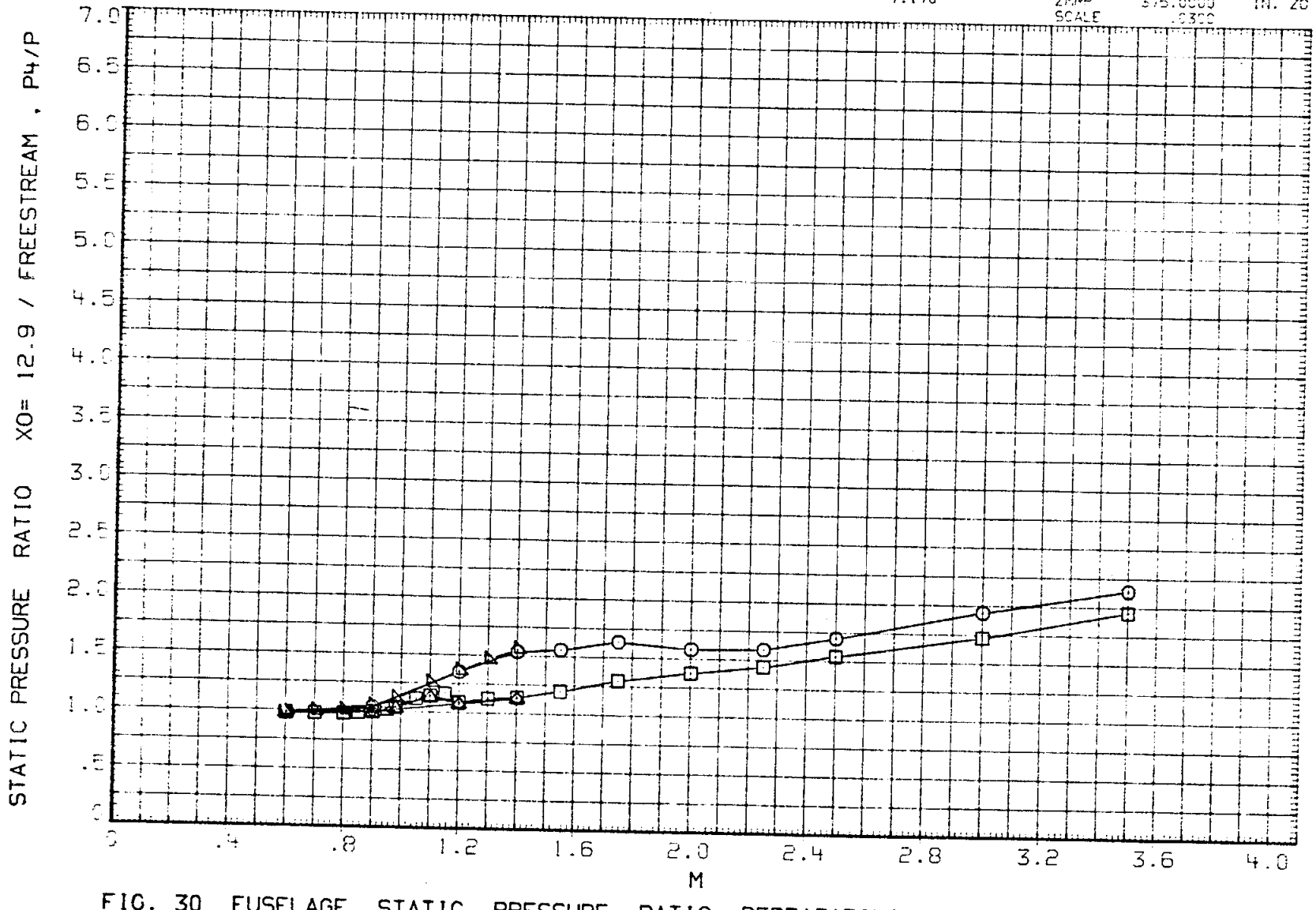


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(C)ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION
AE7B05	○	ARC 11-97-87-094 OA161 ORBITER + RAKES
AE7B15	□	ARC 11-97-87-094 OA161 ORBITER
AE7B20	◇	DATA NOT AVAILABLE
AE7B25	△	DATA NOT AVAILABLE
AE7B01	▽	DATA NOT AVAILABLE
AE7B02	▷	DATA NOT AVAILABLE

BETA	ELEVON	AILRON	BDFLAP
.000	.000	.000	-7.170
.000	.000	.000	-7.170
.000	.000	2.500	-7.170
.000	.000	5.000	-7.170
.000			-7.170
.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

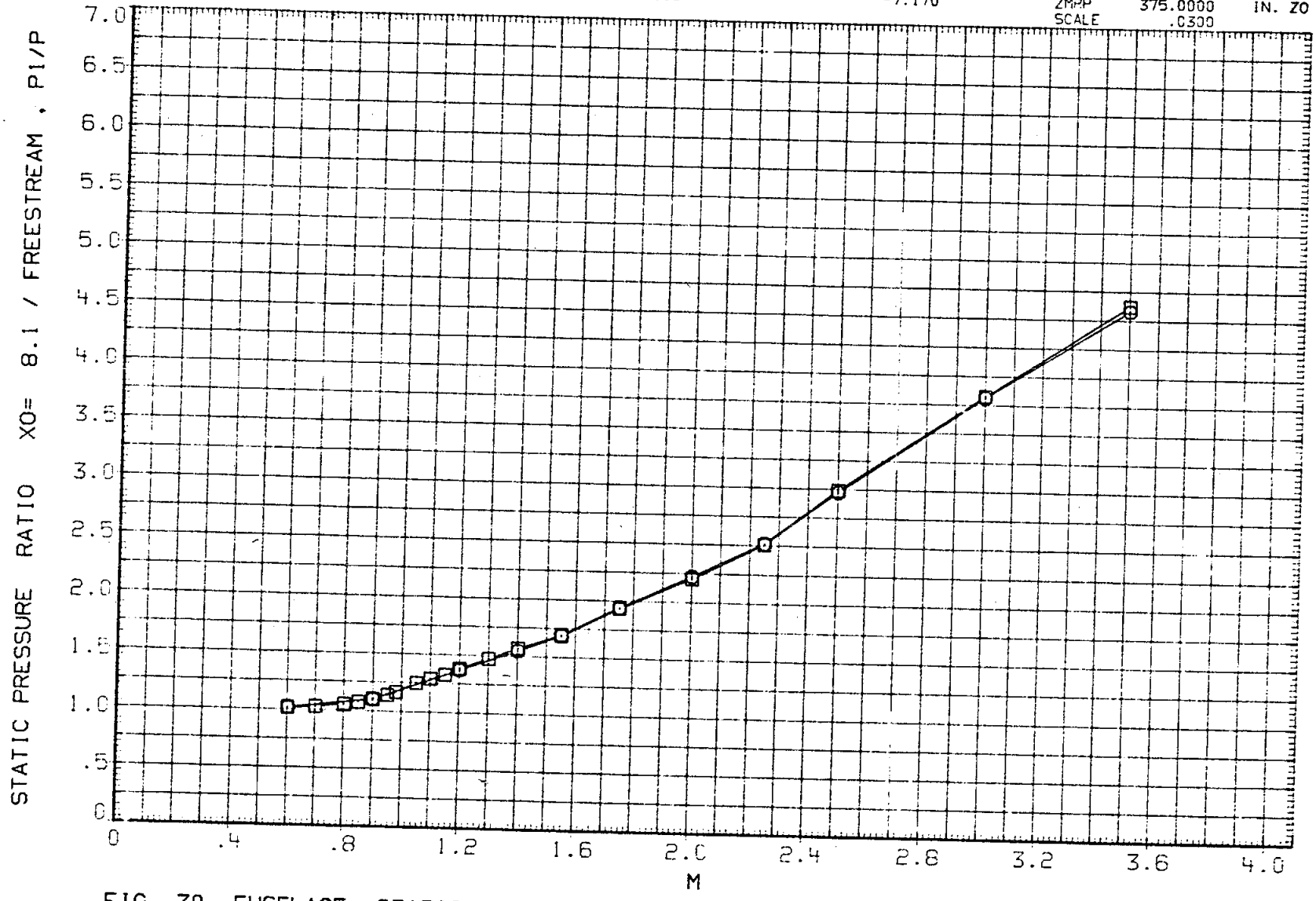


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(D) ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
AE7805	D	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
AE7815	D	ARC 11-97-87-094 OA161 ORBITER	.000	.000	.000	-7.170
AE7820	D	DATA NOT AVAILABLE	.000	.000	2.500	-7.170
AE7825	D	DATA NOT AVAILABLE	.000	.000	5.000	-7.170
AE7801	D	DATA NOT AVAILABLE	.000			-7.170
AE7802	D	DATA NOT AVAILABLE	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6900	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

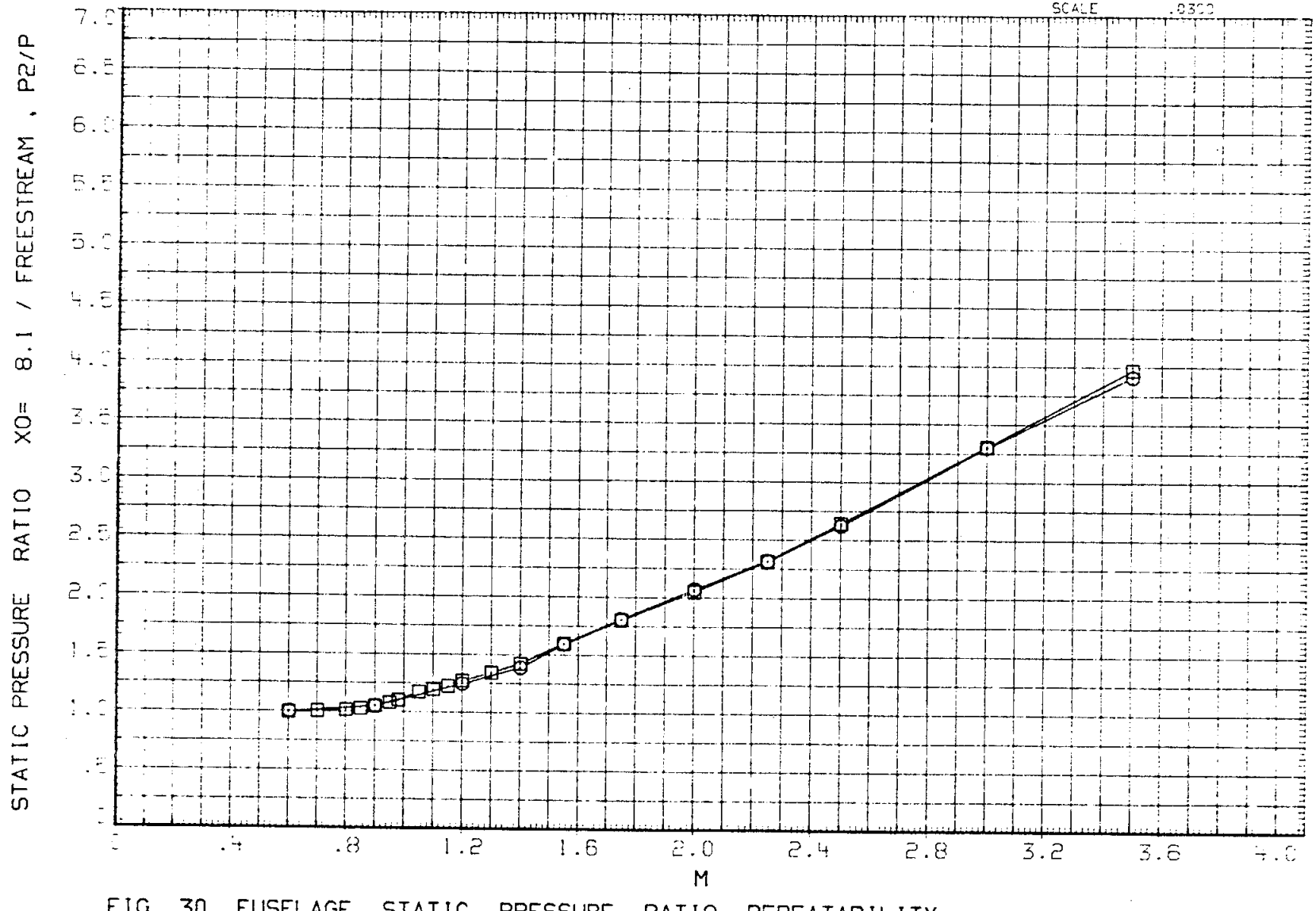


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(D) ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION
AE7B05	○	ARC 11-97-87-094 OA161 ORBITER + RAKES
AE7B15	□	ARC 11-97-87-094 OA161 ORBITER
AE7B20	◇	DATA NOT AVAILABLE
AE7B25	▷	DATA NOT AVAILABLE
AE7B01	▽	DATA NOT AVAILABLE
AE7B02	D	DATA NOT AVAILABLE

BETA	ELEVON	AILRON	BDFLAP
.000	.000	.000	-7.170
.000	.000	.000	-7.170
.000	.000	2.500	-7.170
.000	.000	5.000	-7.170
.000			-7.170
.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

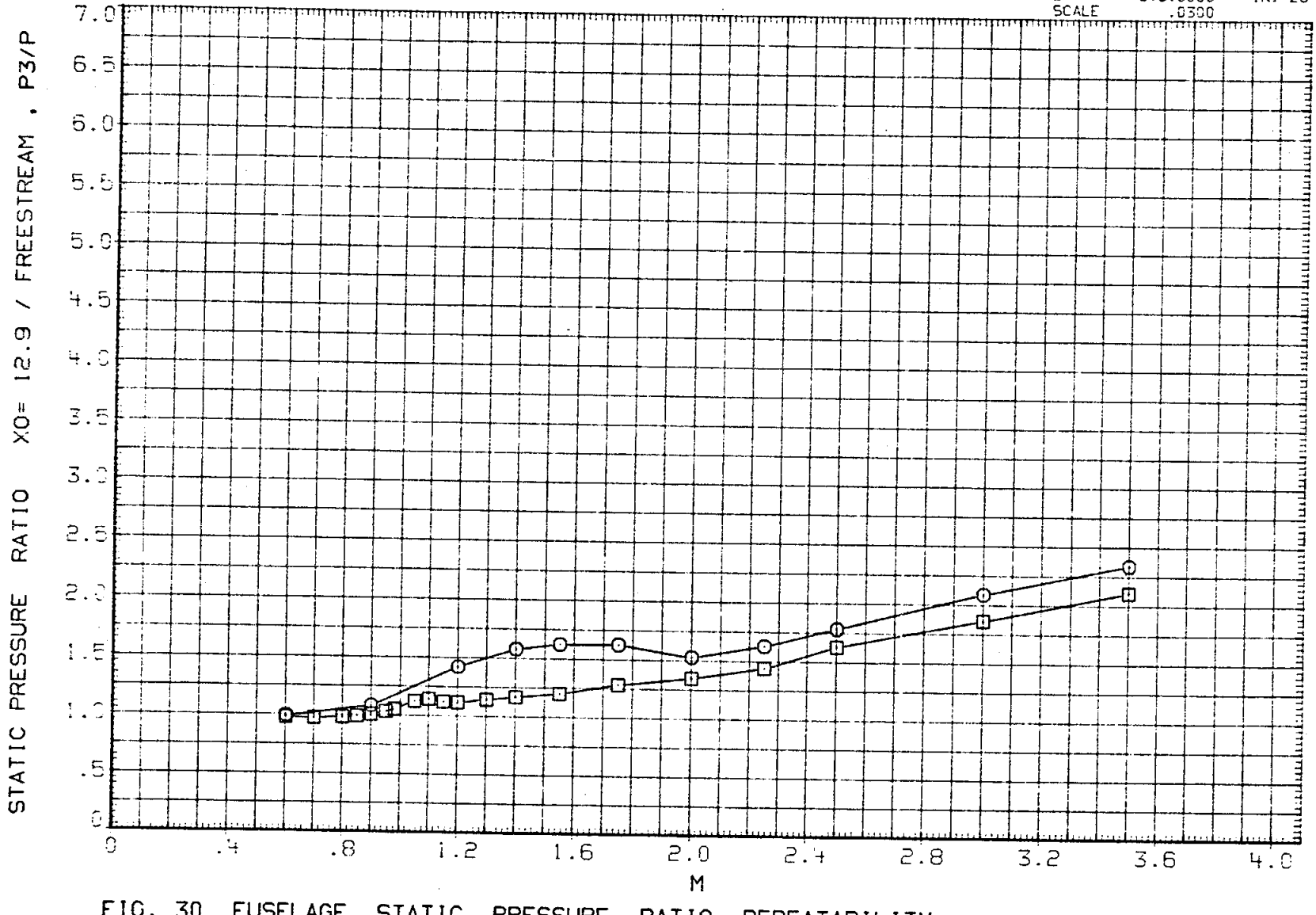


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(D)ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION
AE7805	◇	APC 11-97-87-094 OA161 ORBITER + RAKES
AE7815	▷	APC 11-97-87-094 OA161 ORBITER
AE7820		DATA NOT AVAILABLE
AE7825		DATA NOT AVAILABLE
AE7801		DATA NOT AVAILABLE
AE7802		DATA NOT AVAILABLE

BETA	ELEVON	AILRON	BOFLAP
.000	.000	.000	-7.170
.000	.000	.000	-7.170
.000	.000	2.500	-7.170
.000	.000	5.000	-7.170
.000			-7.170
.000			-7.170

REFERENCE INFORMATION

SREF	2699.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

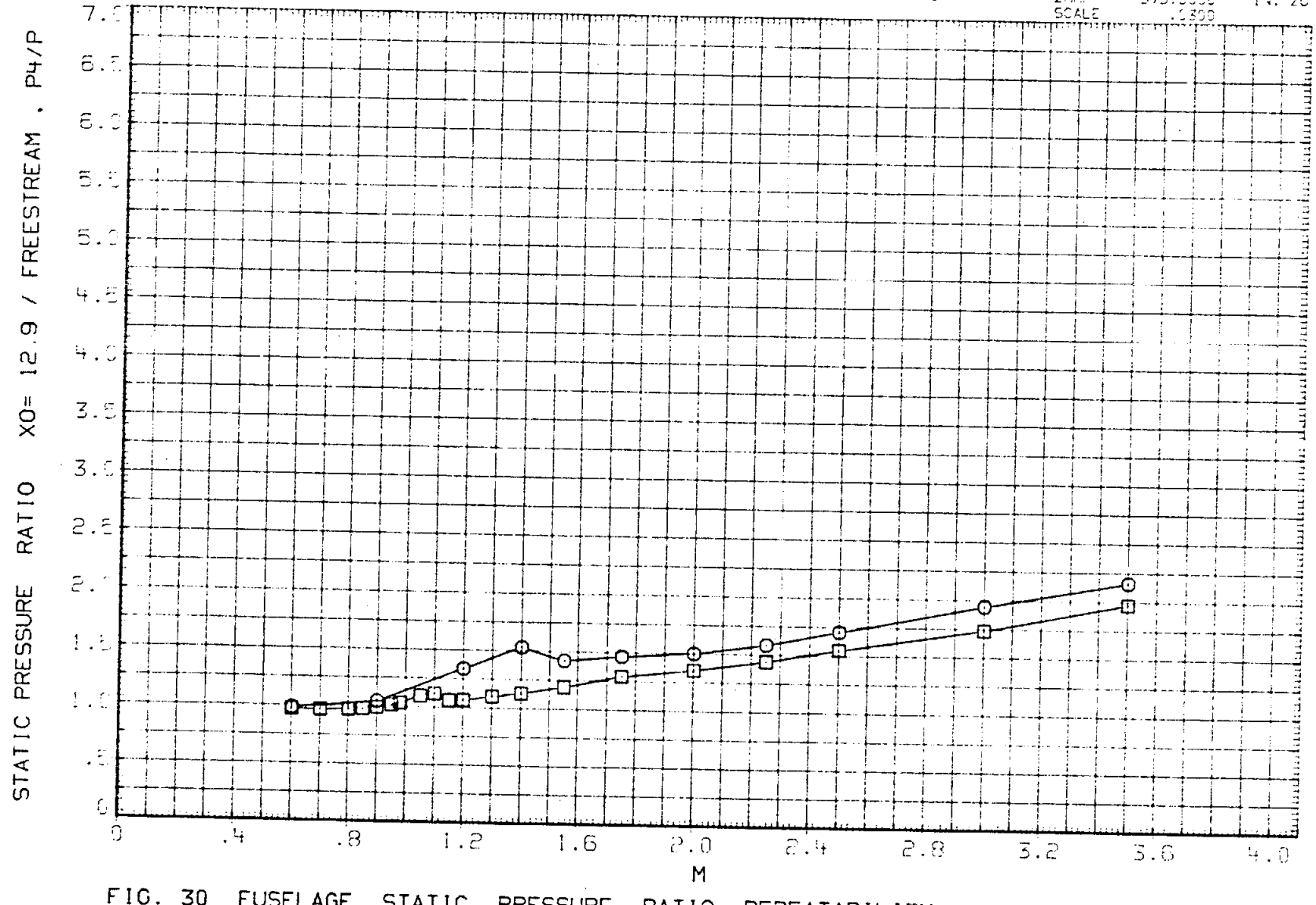


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(D) ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION
AE7B05	○	ARC 11-97-87-094 OA161 ORBITER + RAKES
AE7B15	□	ARC 11-97-87-094 OA161 ORBITER
AE7B20	◇	DATA NOT AVAILABLE
AE7B25	△	DATA NOT AVAILABLE
AE7B01	▽	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES
AE7B02	▷	ARC 11-97-87-094 OA161 ORBITER - WING

BETA	ELEVON	AILRON	BDFLAP
.000	.000	.000	-7.170
.000	.000	.000	-7.170
.000	.000	2.500	-7.170
.000	.000	5.000	-7.170
.000			-7.170
.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.5800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

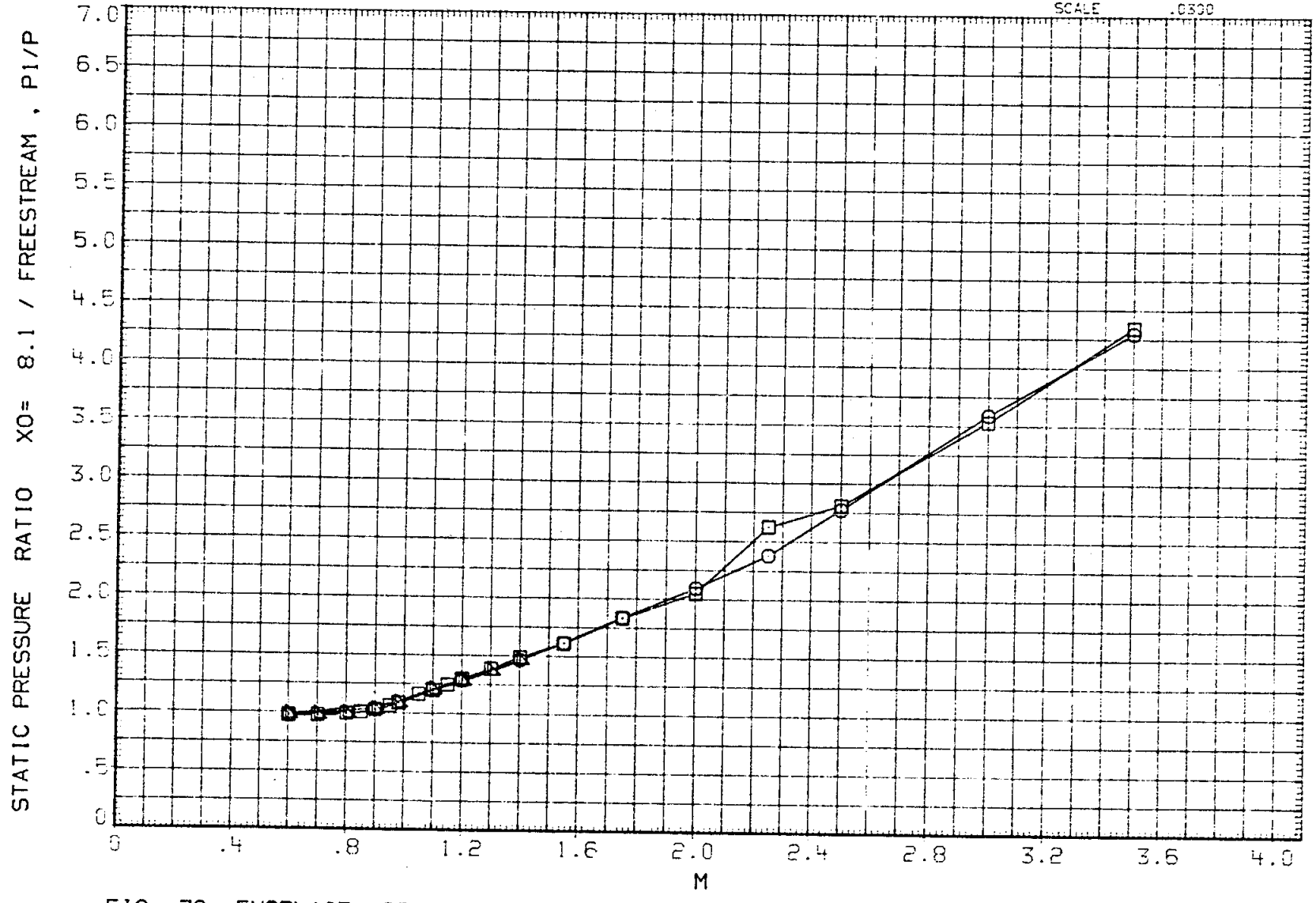


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(E) ALPHA = 24.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
AE7B05	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
AE7B15	□	ARC 11-97-87-094 OA161 ORBITER	.000	.000	.000	-7.170
AE7B20	◇	DATA NOT AVAILABLE	.000	.000	2.500	-7.170
AE7B25	△	DATA NOT AVAILABLE	.000	.000	5.000	-7.170
AE7B01	▷	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170
AE7B02	D	ARC 11-97-87-094 OA161 ORBITER - WING	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

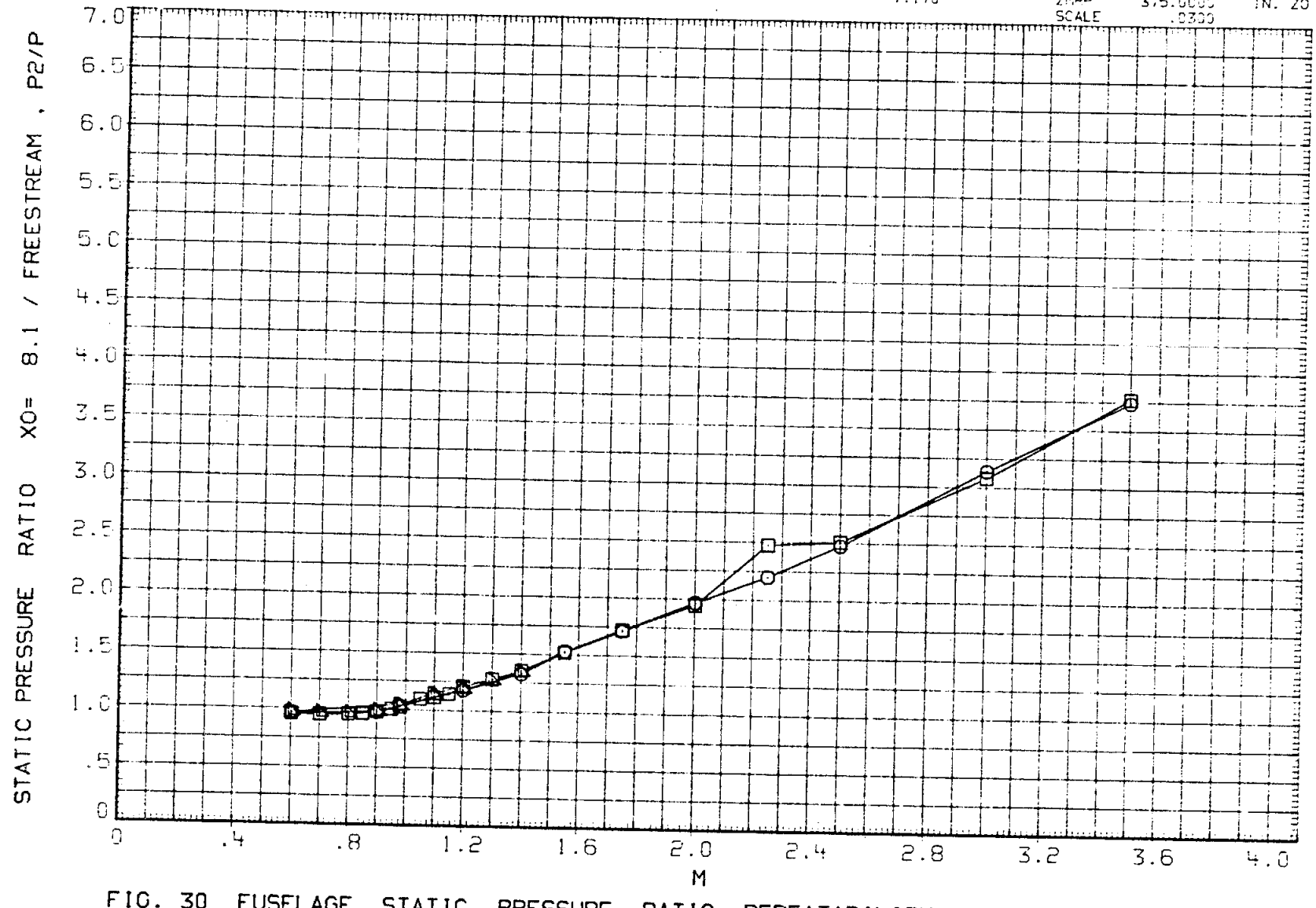


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(E)ALPHA = 24.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
AE7805	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
AE7815	□	ARC 11-97-87-094 OA161 ORBITER	.000	.000	.000	-7.170
AE7820	◇	DATA NOT AVAILABLE	.000	.000	2.500	-7.170
AE7825	△	DATA NOT AVAILABLE	.000	.000	5.000	-7.170
AE7801	▽	ARC 11-97-87-094 OA161 ORBITER - WING + RAKES	.000			-7.170
AE7802	D	ARC 11-97-87-094 OA161 ORBITER - WING	.000			-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

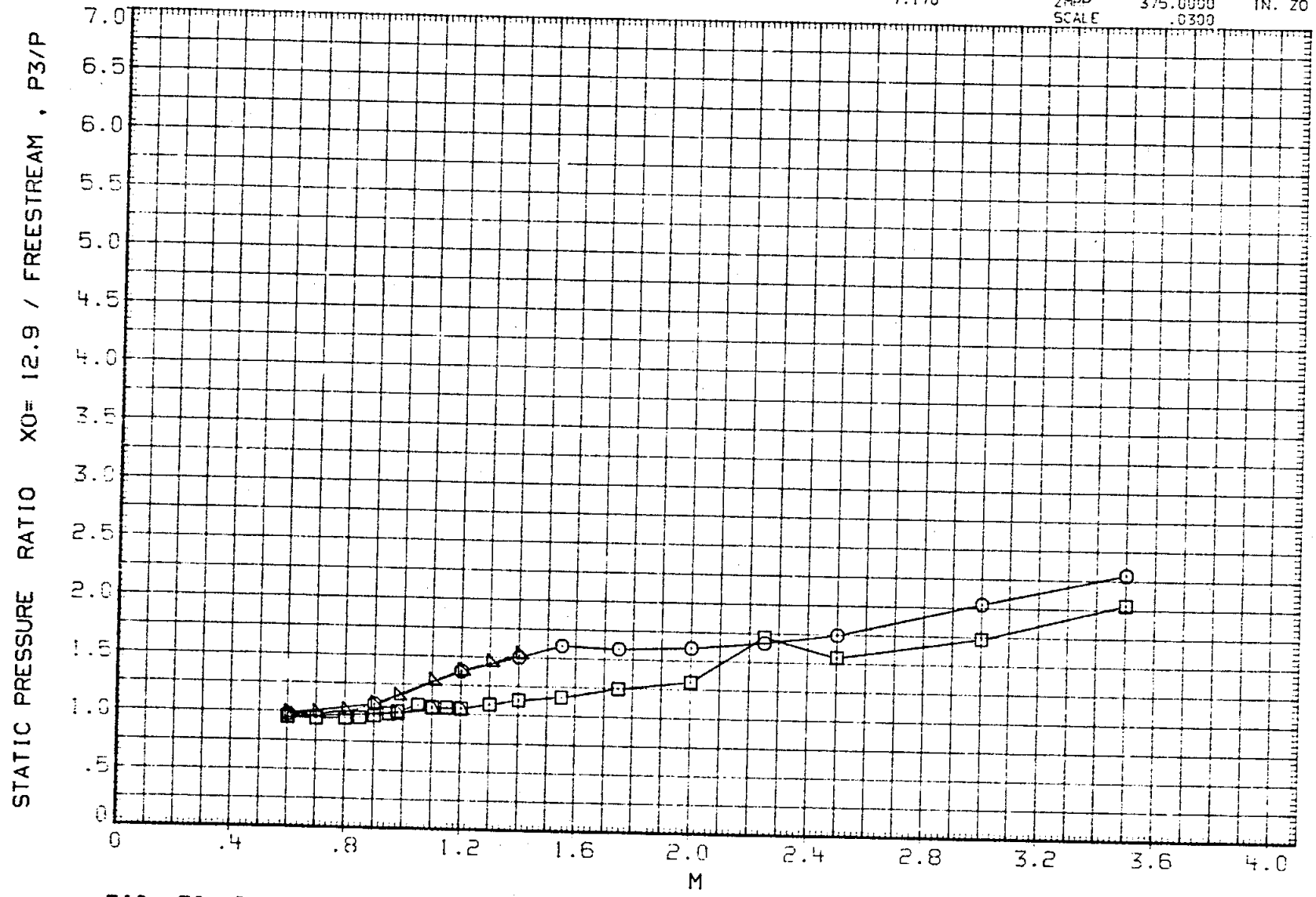


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(E)ALPHA = 24.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BODFLAP
AE7805	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	.000	.000	.000	-7.170
AE7815	□	ARC 11-97-87-094 OA161 ORBITER	.000	.000	.000	-7.170
AE7820	◇	DATA NOT AVAILABLE	.000	.000	2.500	-7.170
AE7825	△	DATA NOT AVAILABLE	.000	.000	5.000	-7.170
AE7801	▽	ARC 11-97-87-094 OA161 ORBITER + WING + RAKES	.000			-7.170
AE7802	▷	ARC 11-97-87-094 OA161 ORBITER - WING	.000			-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0500	

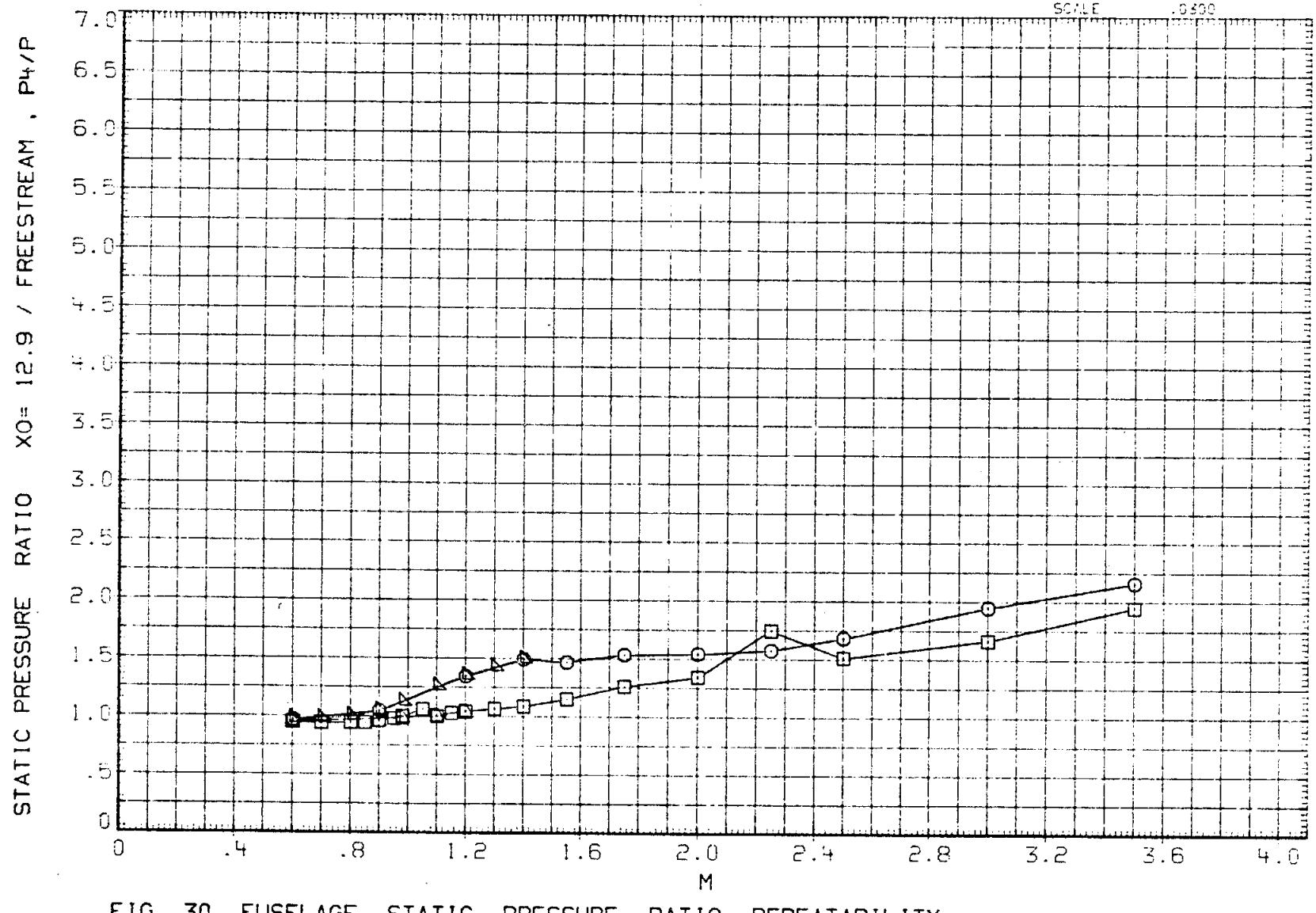


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(E)ALPHA = 24.00

DATA SET	SYMBOL	CONFIGURATION
AE7R07	○	ARC 11-97-87-094 0A161 ORBITER + RAKES
AE7B17	□	ARC 11-97-87-094 0A161 ORBITER
AE7B22	◇	ARC 11-97-87-094 0A161 ORBITER
AE7B27	△	ARC 11-97-87-094 0A161 ORBITER

BETA	ELEVON	AILRON	BDFLAP
5.000	.000	.000	-7.170
5.000	.000	.000	-7.170
5.000	.000	2.500	-7.170
5.000	.000	5.000	-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0500	

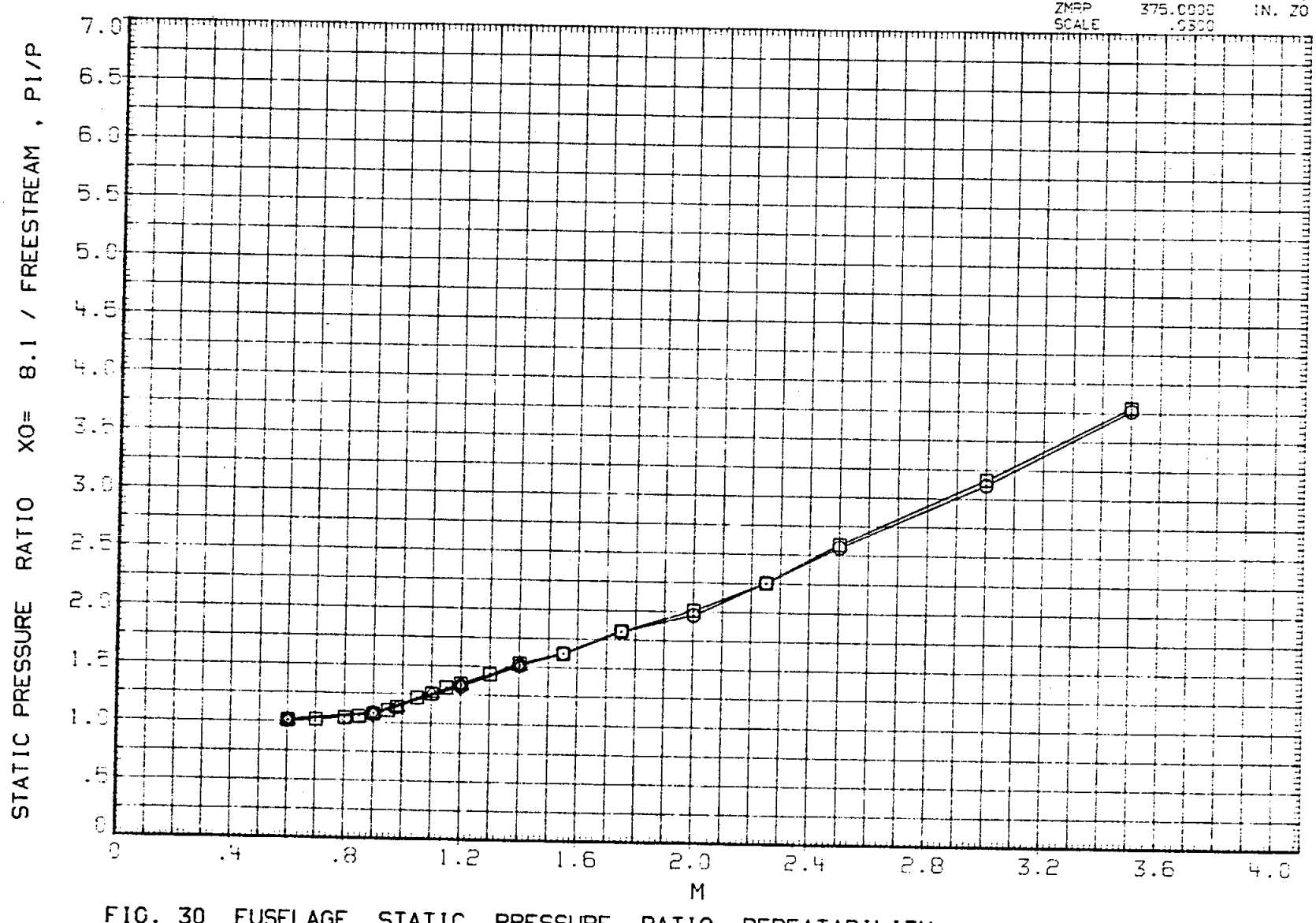


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(A)ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
AE7807	○	ARC II 97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
AE7811	□	ARC II 97-87-094 OA161 ORBITER	5.000	.000	.000	-7.170
AE7822	◇	ARC II-97-87-094 OA161 ORBITER	5.000	.000	2.500	-7.170
AE7827	△	ARC II-97-87-094 OA161 ORBITER	5.000	.000	5.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

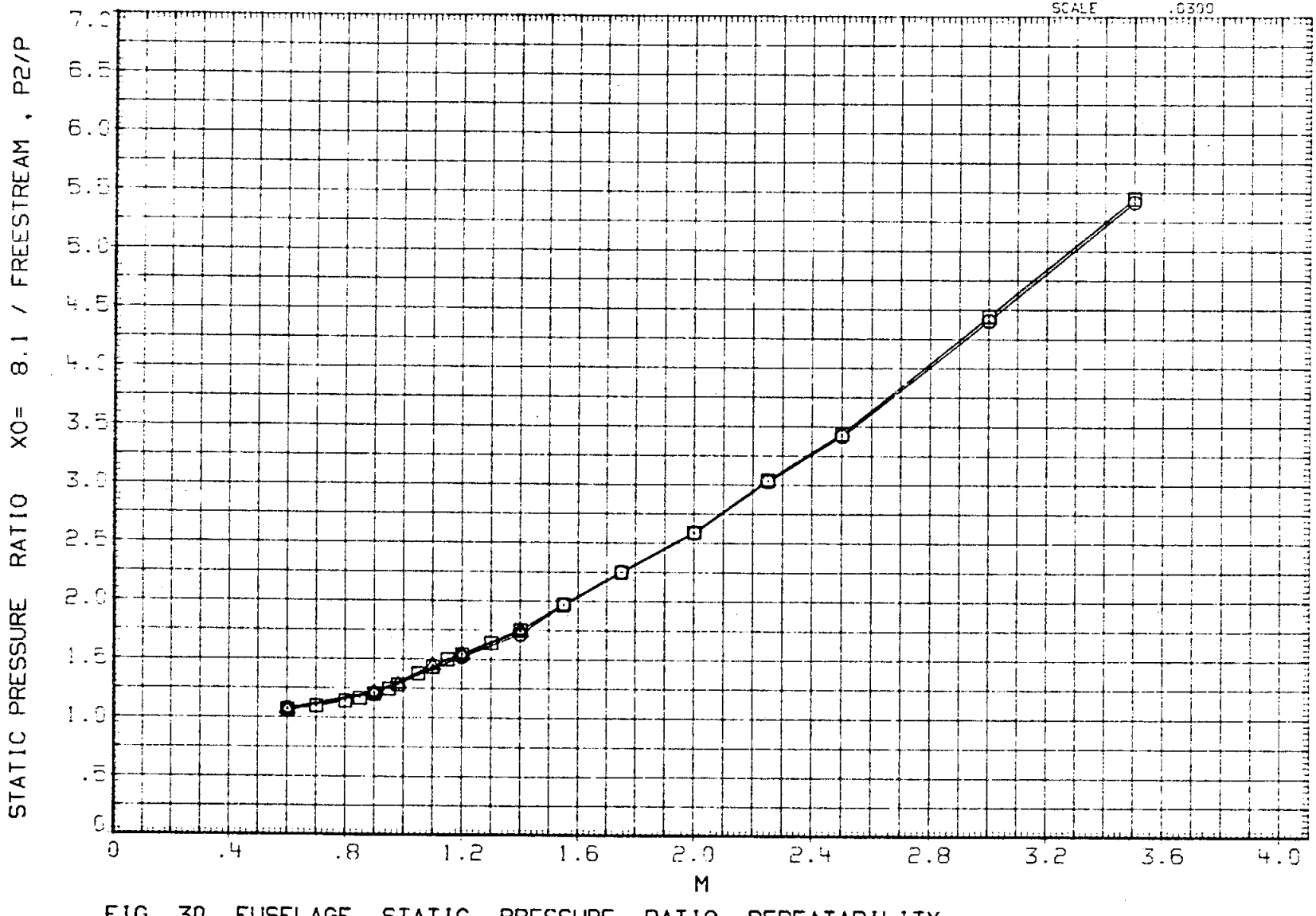


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(A)ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION
AE7807	○	ARC 11-97-87-094 OA161 ORBITER + RAKES
AE7817	◇□	ARC 11-97-87-094 OA161 ORBITER
AE7822	◇	ARC 11-97-87-094 OA161 ORBITER
AE7827	△	ARC 11-97-87-094 OA161 ORBITER

BETA	ELEVON	AILRON	BDFLAP
5.000	.000	.000	-7.170
5.000	.000	.000	-7.170
5.000	.000	2.500	-7.170
5.000	.000	5.000	-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	935.6900	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

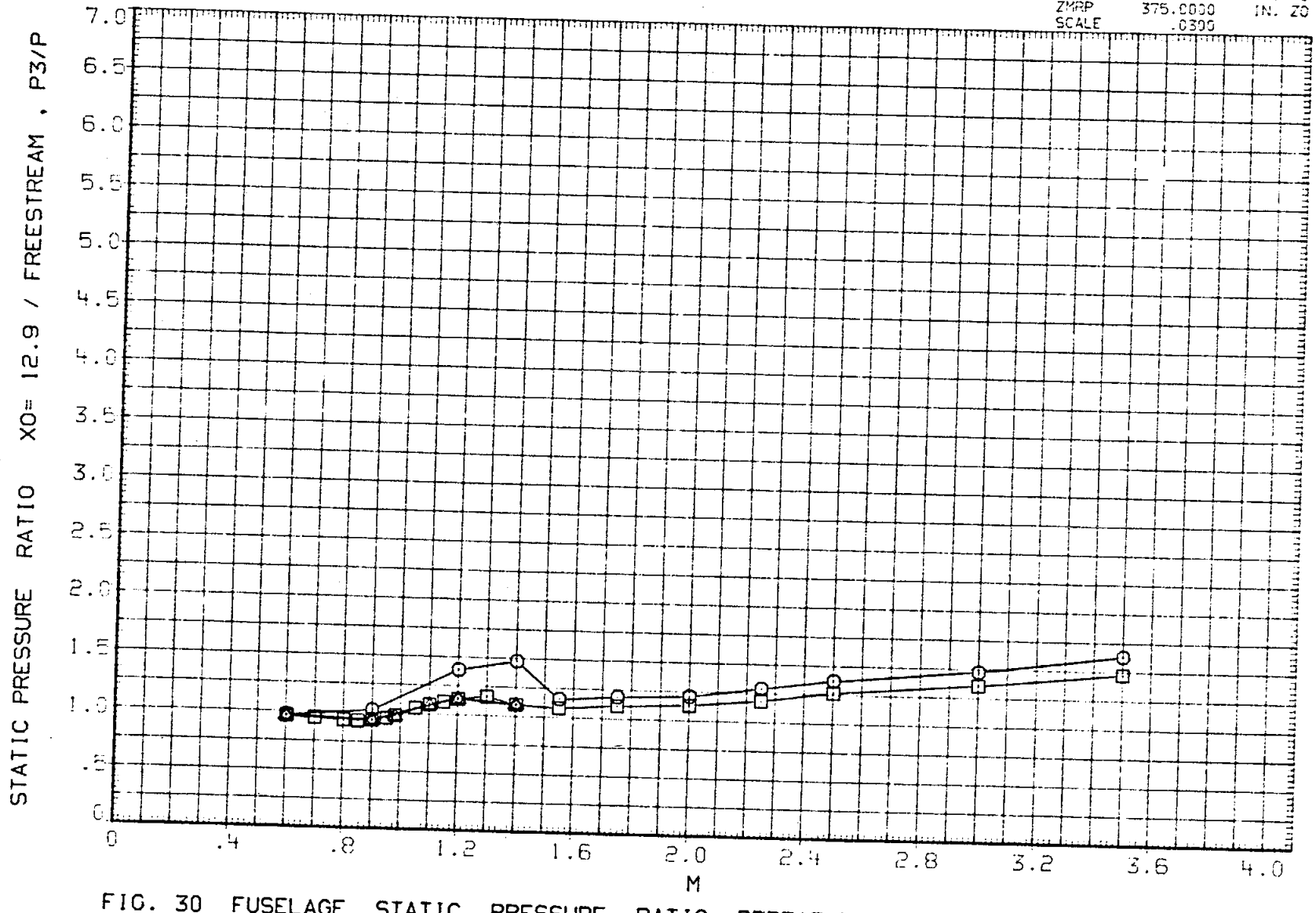


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(A) ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
AE7807	○	ARC 11-97-87-094 0A161 ORBITER + RAKES	5.000	.000	.000	-7.170
AE7812	□	ARC 11-97-87-094 0A161 ORBITER	5.000	.000	.000	-7.170
AE7822	◁	ARC 11-97-87-094 0A161 ORBITER	5.000	.000	2.500	-7.170
AE7827	▷	ARC 11-97-87-094 0A161 ORBITER	5.000	.000	5.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	935.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

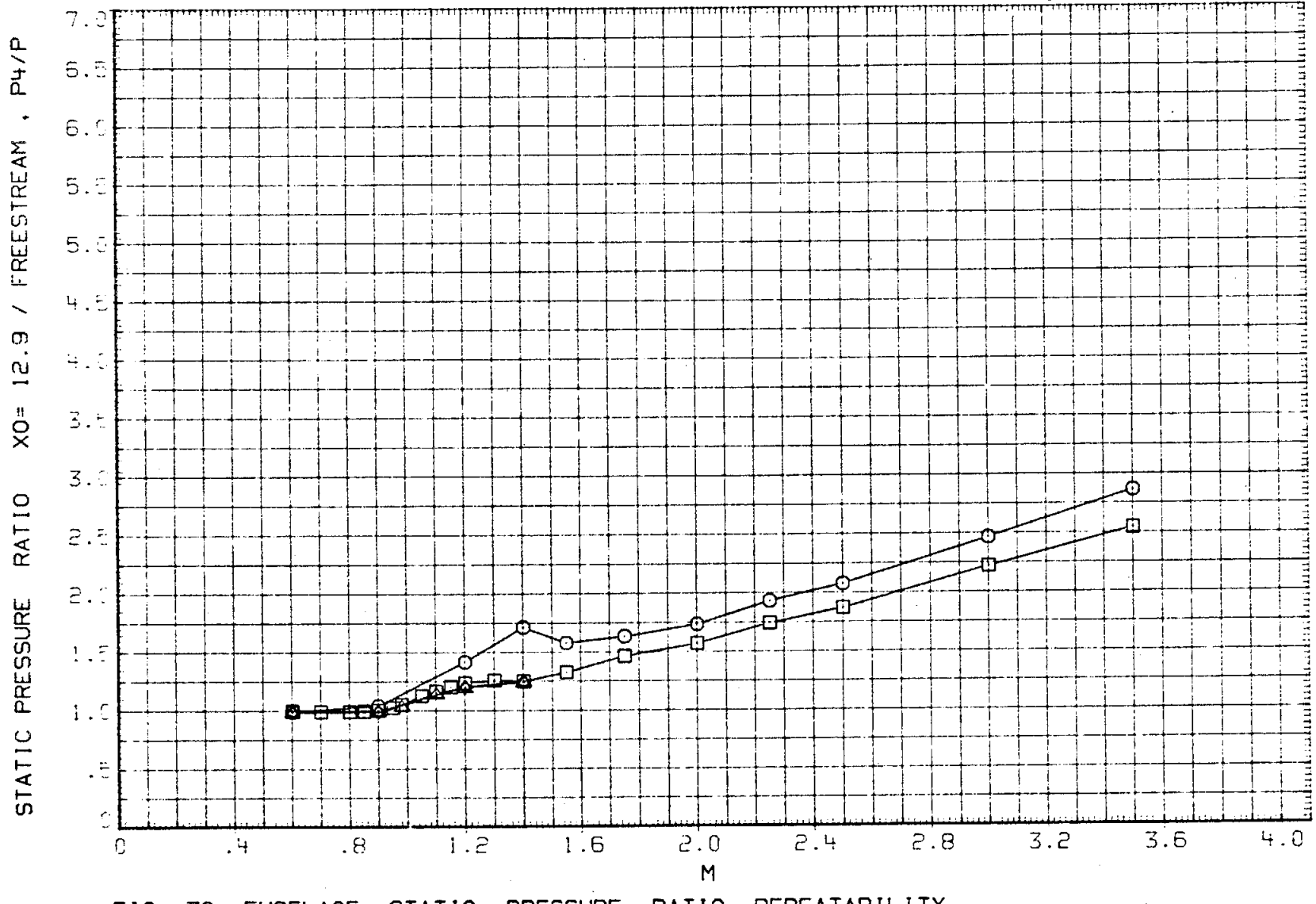


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(A)ALPHA = .00

DATA SET	SYMBOL	CONFIGURATION
AE7B07	○	ARC 11-97-87-094 OA161 ORBITER + RAKES
AE7B17	□	ARC 11-97-87-094 OA161 ORBITER
AE7B22	◇	DATA NOT AVAILABLE
AE7B27	△	DATA NOT AVAILABLE

BETA	ELEVON	AILRON	BDFLAP
5.000	.000	.000	-7.170
5.000	.000	.000	-7.170
5.000	.000	2.500	-7.170
5.000	.000	5.000	-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

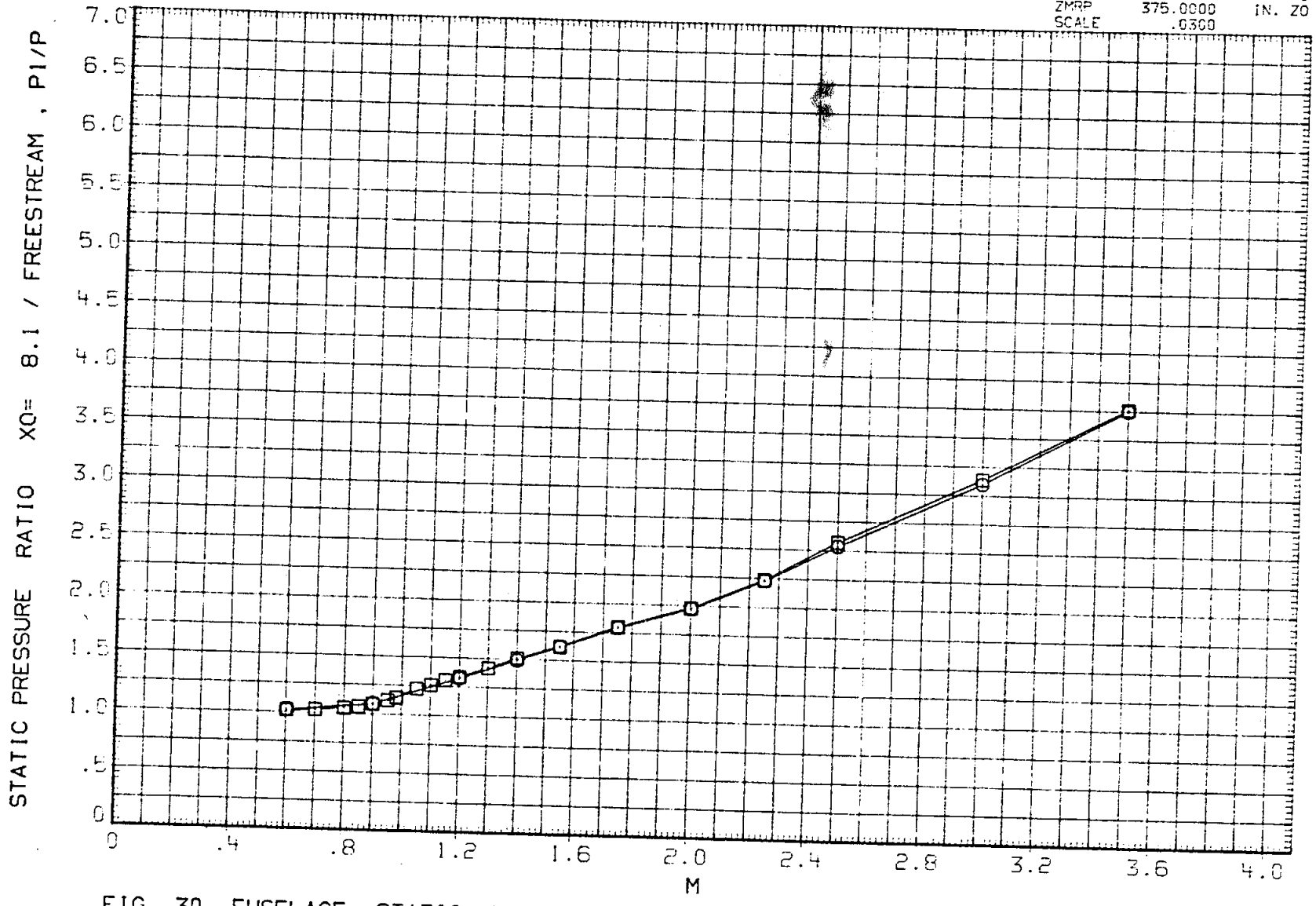


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(B) ALPHA = 6.00

DATA SET SYMBOL		CONFIGURATION
AE78B3	○	ARC 1-97-87-094 OA161 ORBITER + RAKES
AE78B14	□	ARC 1-97-87-094 OA161 ORBITER
AE78B22	△	DATA NOT AVAILABLE
AE78B7	◇	DATA NOT AVAILABLE

BETA	ELEVON	AILRON	BDFLAP
5.000	.000	.000	-7.170
5.000	.000	.000	-7.170
5.000	.000	2.500	-7.170
5.000	.000	5.000	-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

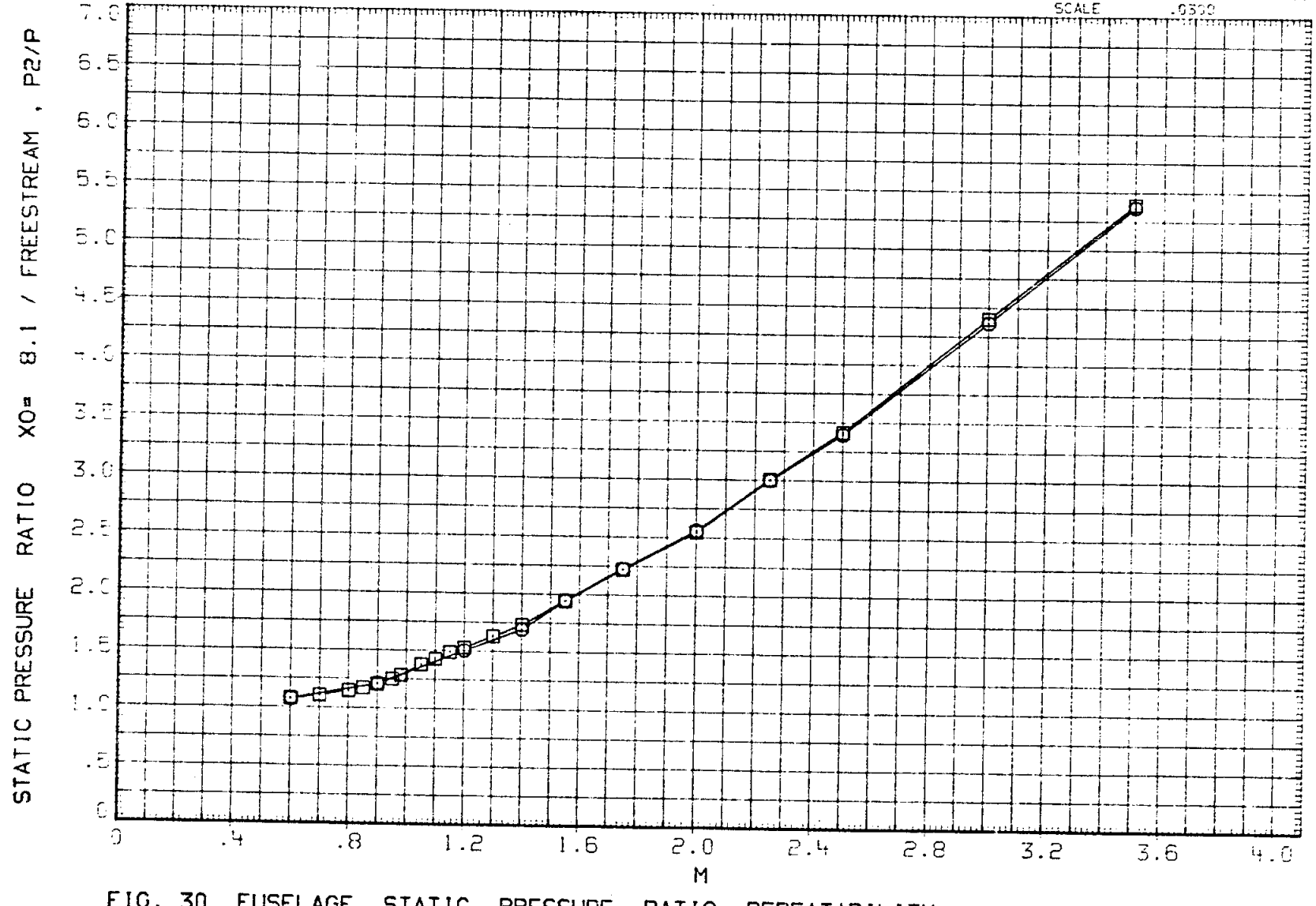


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(B) ALPHA = 6.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
AE7B07	○	ARC 11-97-87-094 0A161 ORBITER + RAKES	5.000	.000	.000	-7.170
AE7B17	□	ARC 11-97-87-094 0A161 ORBITER	5.000	.000	.000	-7.170
AE7B22	◇	DATA NOT AVAILABLE	5.000	.000	2.500	-7.170
AE7B27	△	DATA NOT AVAILABLE	5.000	.000	5.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

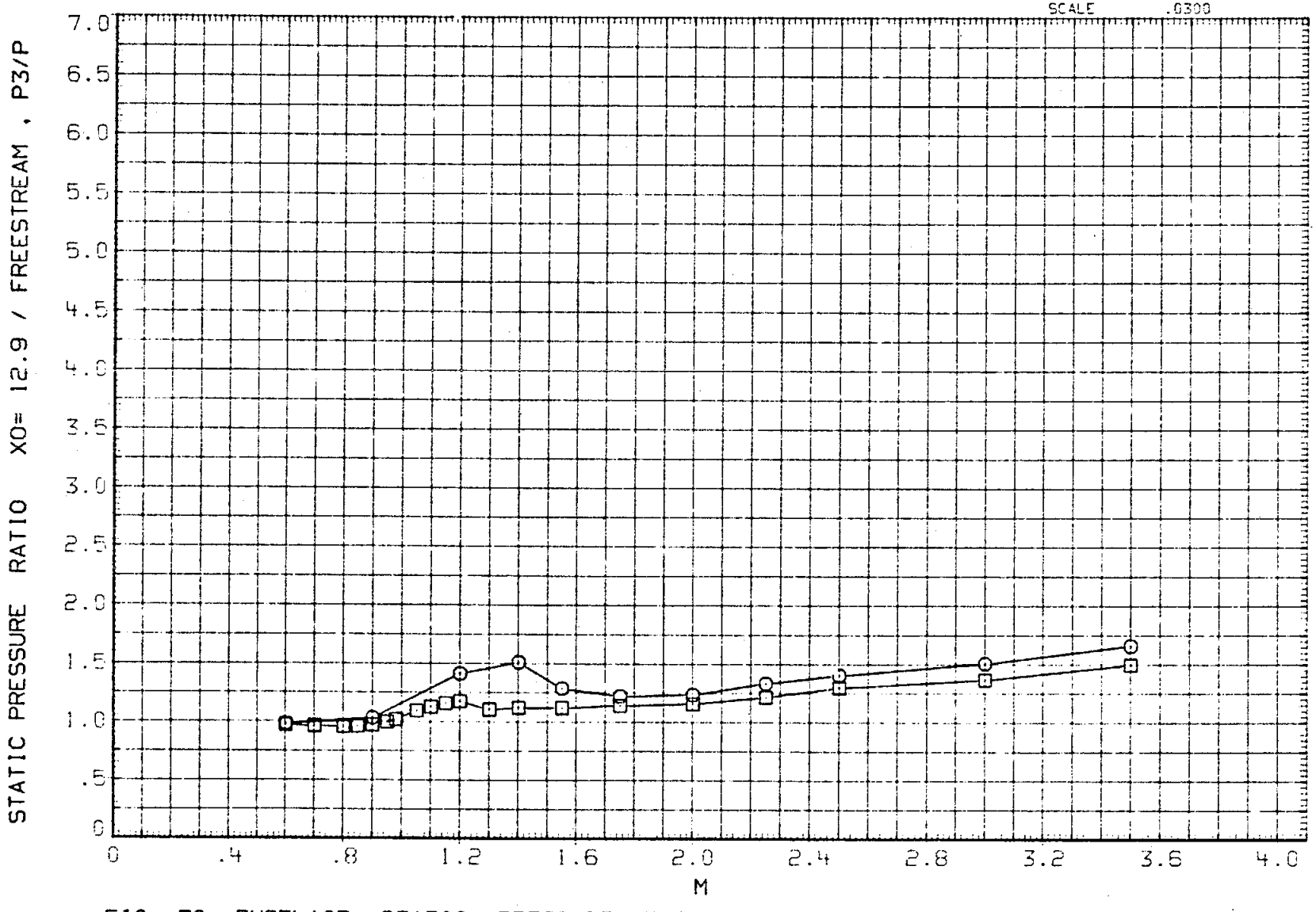


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(B)ALPHA = 6.00

DATA SET	SYMBOL	CONFIGURATION
AE7807	○	ARC 11-97-87-094 OA161 ORBITER + RAKES
AE7817	□	ARC 11-97-87-094 OA161 ORBITER
AE7826	◇	DATA NOT AVAILABLE
AE7827	△	DATA NOT AVAILABLE

BETA	ELEVON	AILRON	BDFLAP
5.000	.000	.000	-7.170
5.000	.000	.000	-7.170
5.000	.000	2.500	-7.170
5.000	.000	5.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

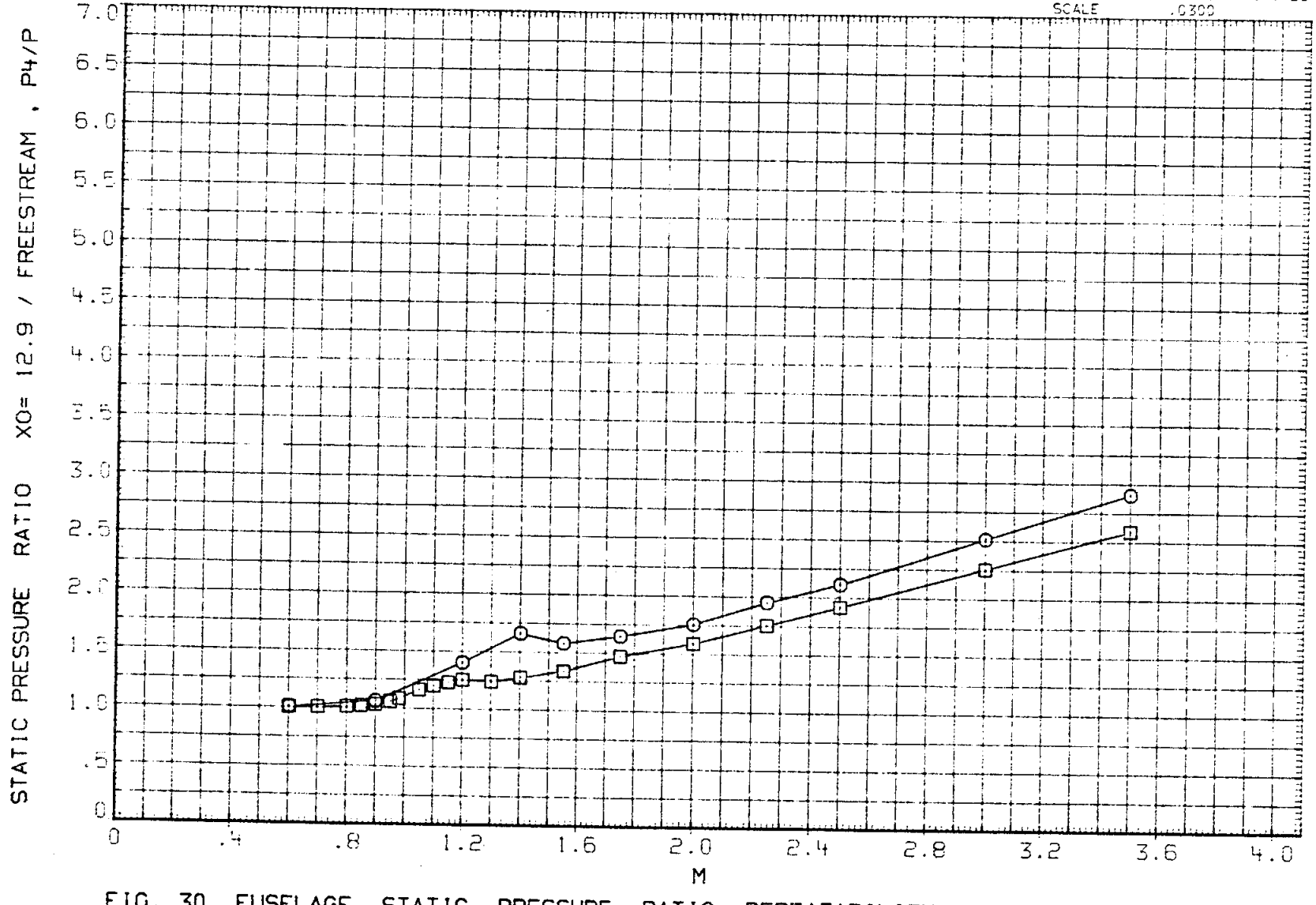


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(B)ALPHA = 6.00

DATA SET	SYMBOL	CONFIGURATION
AE7B07	○	ARC 11-97-87-094 0A161 ORBITER + RAKES
AE7B17	□	ARC 11-97-87-094 0A161 ORBITER
AE7B22	◇	ARC 11-97-87-094 0A161 ORBITER
AE7B27	△	ARC 11-97-87-094 0A161 ORBITER

BETA	ELEVON	AILRON	BDFLAP
5.000	.000	.000	-7.170
5.000	.000	.000	-7.170
5.000	.000	2.500	-7.170
5.000	.000	5.000	-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

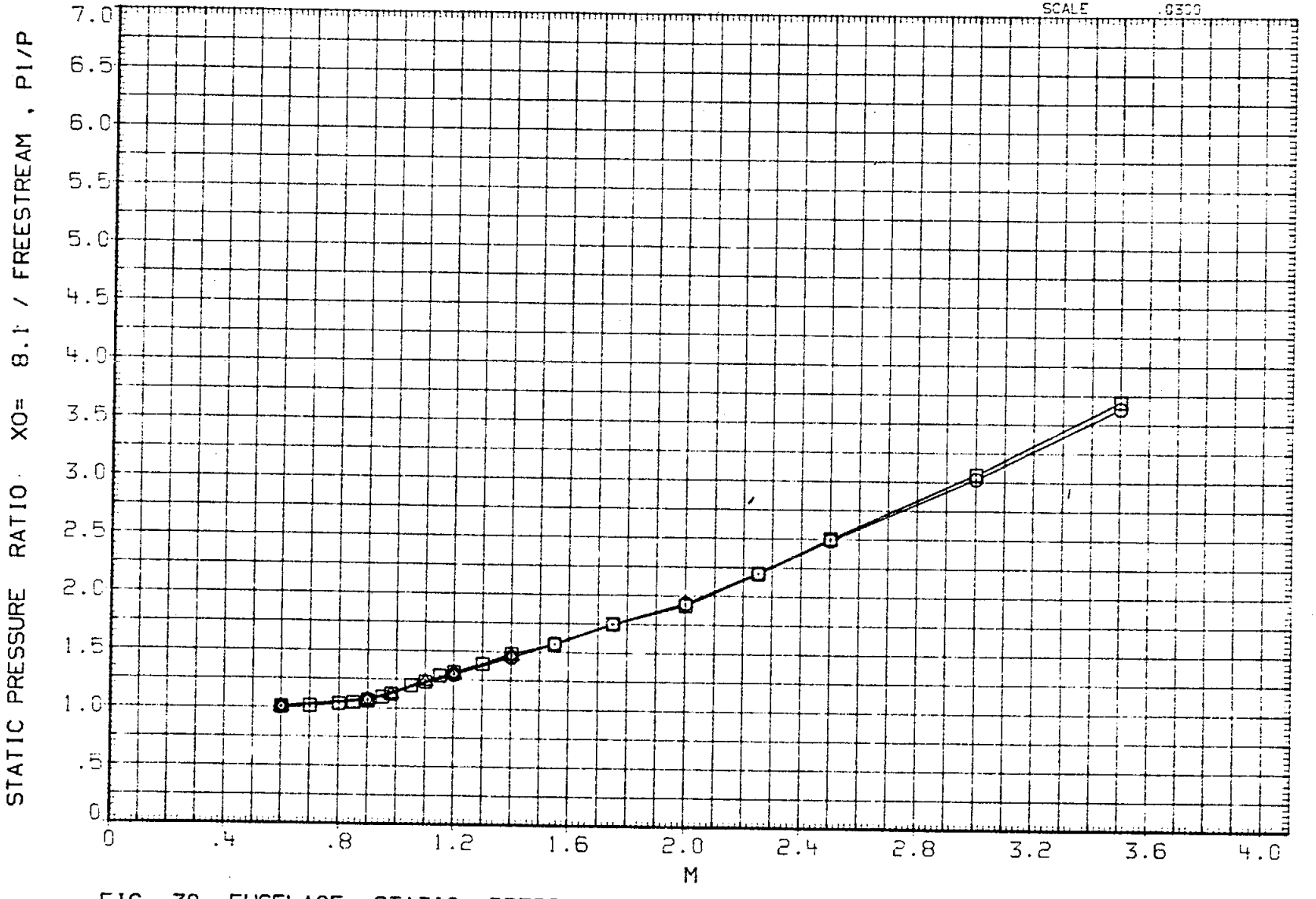


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(C) ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	RUDTAB
AE7807	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
AE7817	□	ARC 11-97-87-094 OA161 ORBITER	5.000	.000	.000	-7.170
AE7822	◇	ARC 11-97-87-094 OA161 ORBITER	5.000	.000	2.500	-7.170
AE7827	△	ARC 11-97-87-094 OA161 ORBITER	5.000	.000	5.000	-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6600	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.2610	

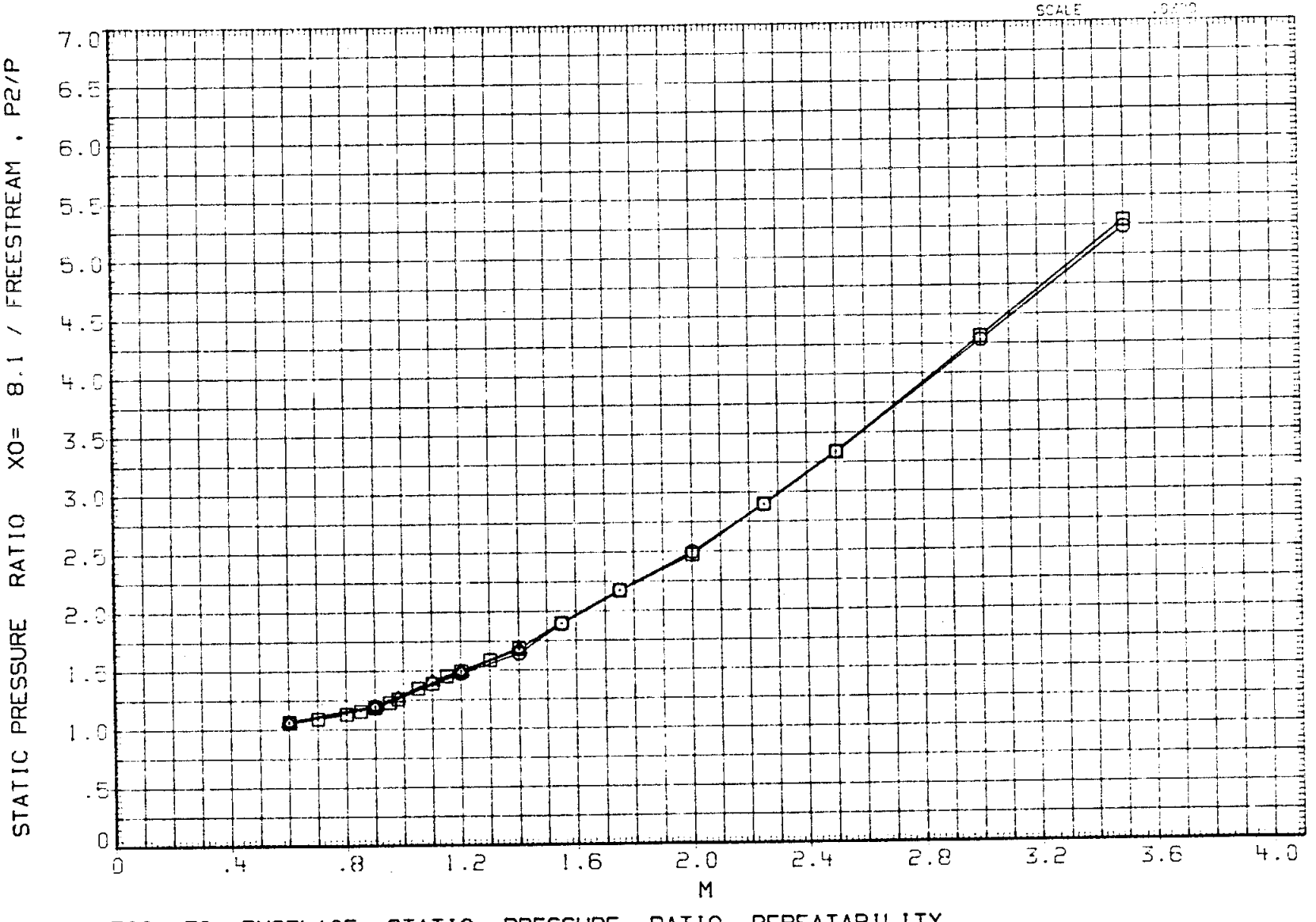


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(C)ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION
AE7807	○	ARC 11-97-87-094 OA161 ORBITER + RAKES
AE7817	□	ARC 11-97-87-094 OA161 ORBITER
AE7822	◇	ARC 11-97-87-094 OA161 ORBITER
AE7827	△	ARC 11-97-87-094 OA161 ORBITER

BETA	ELEVON	AILRON	BDFLAP
5.000	.000	.000	-7.170
5.000	.000	.000	-7.170
5.000	.000	2.500	-7.170
5.000	.000	5.000	-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

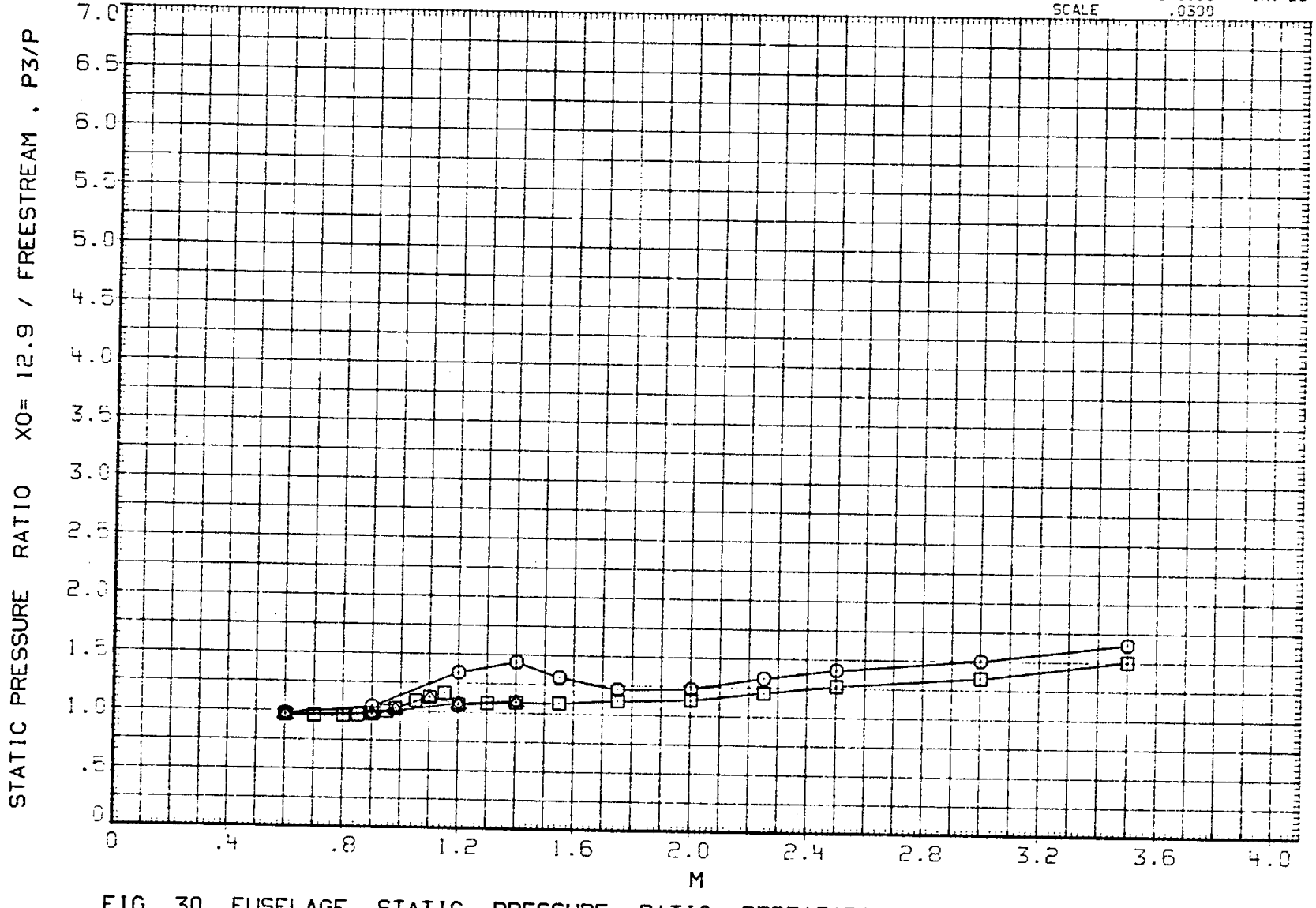


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(C)ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	RUDDAP
AE7807	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
AE7817	□	ARC 11-97-87-094 OA161 ORBITER	5.000	.000	.000	-7.170
AE7822	◇	ARC 11-97-87-094 OA161 ORBITER	5.000	.000	2.500	-7.170
AE7827	△	ARC 11-97-87-094 OA161 ORBITER	5.000	.000	5.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

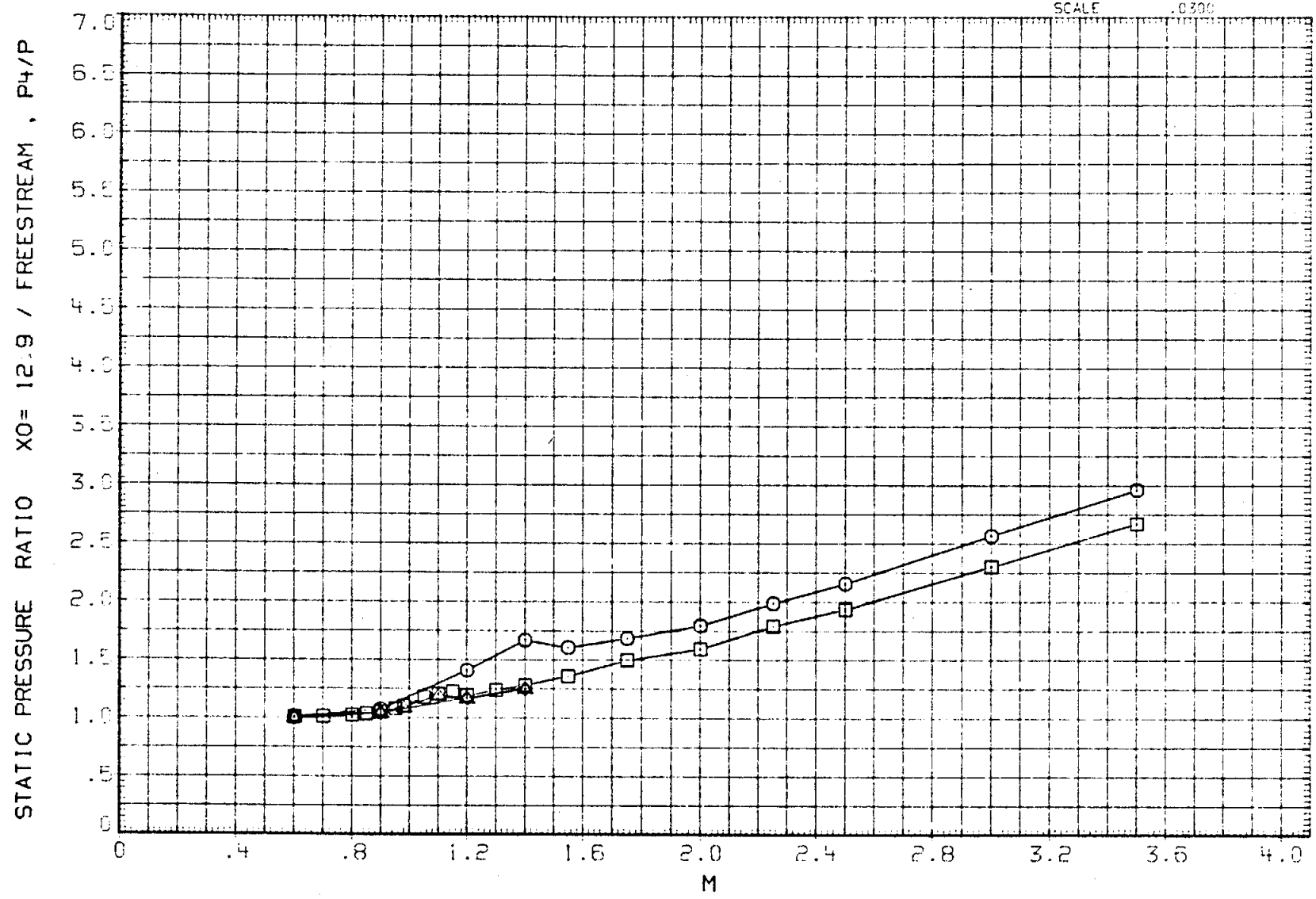


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(C)ALPHA = 12.00

DATA SET	SYMBOL	CONFIGURATION
AE7807	○	ARC 11-97-87-094 OA161 ORBITER + RAKES
AE7817	□	ARC 11-97-87-094 OA161 ORBITER
AE7822	◇	DATA NOT AVAILABLE
AE7827	△	DATA NOT AVAILABLE

BETA	ELEVON	AILRON	BDFLAP
5.000	.000	.000	-7.170
5.000	.000	.000	-7.170
5.000	.000	2.500	-7.170
5.000	.000	5.000	-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

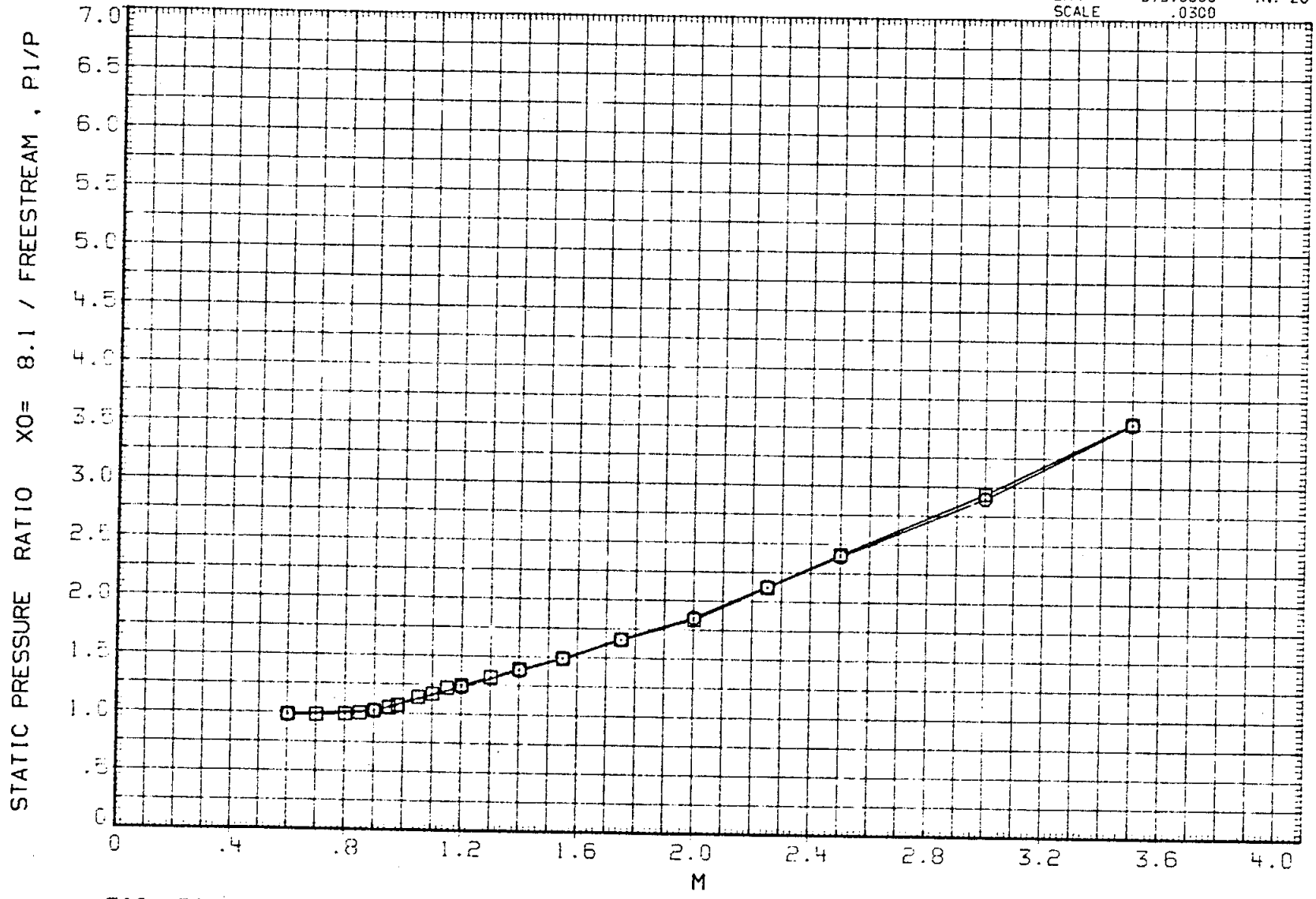


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(D) ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION
AE7807	○	ARC 11-97-87-094 OA161 ORBITER + RAKES
AE7817	□	ARC 11-97-87-094 OA161 ORBITER
AE7822	◇	DATA NOT AVAILABLE
AE7827	△	DATA NOT AVAILABLE

BETA	ELEVON	AILRON	BDFLAP
5.000	.000	.000	-7.170
5.000	.000	.000	-7.170
5.000	.000	2.500	-7.170
5.000	.000	5.000	-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

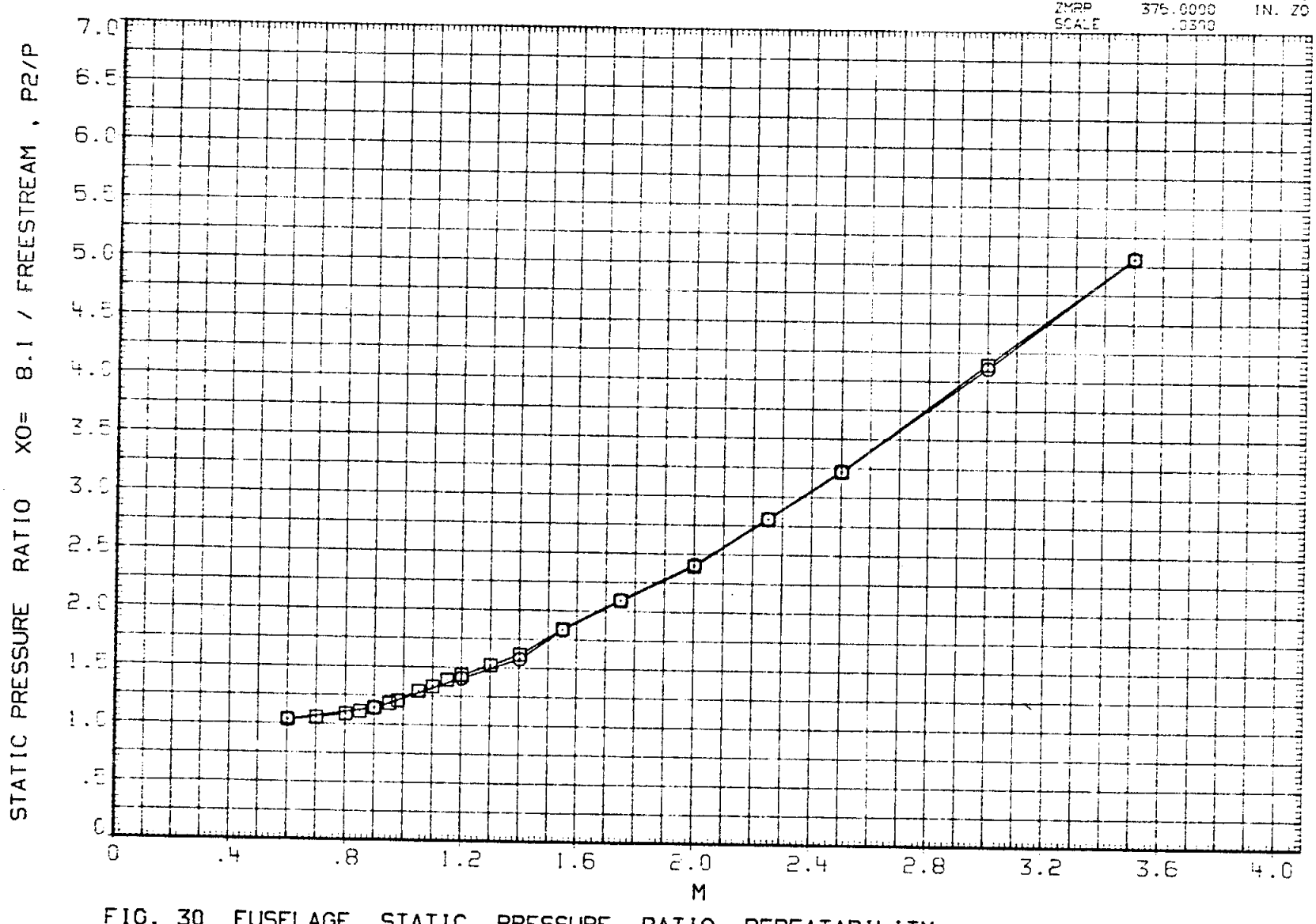


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(D) ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION
AE7807	○	ARC 11-97-87-094 OA161 ORBITER + RAKES
AE7817	□	ARC 11-97-87-094 OA161 ORBITER
AE7822	◇	DATA NOT AVAILABLE
AE7827	△	DATA NOT AVAILABLE

BETA	ELEVON	AILRON	BDFLAP
5.000	.000	.000	-7.170
5.000	.000	.000	-7.170
5.000	.000	2.500	-7.170
5.000	.000	5.000	-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

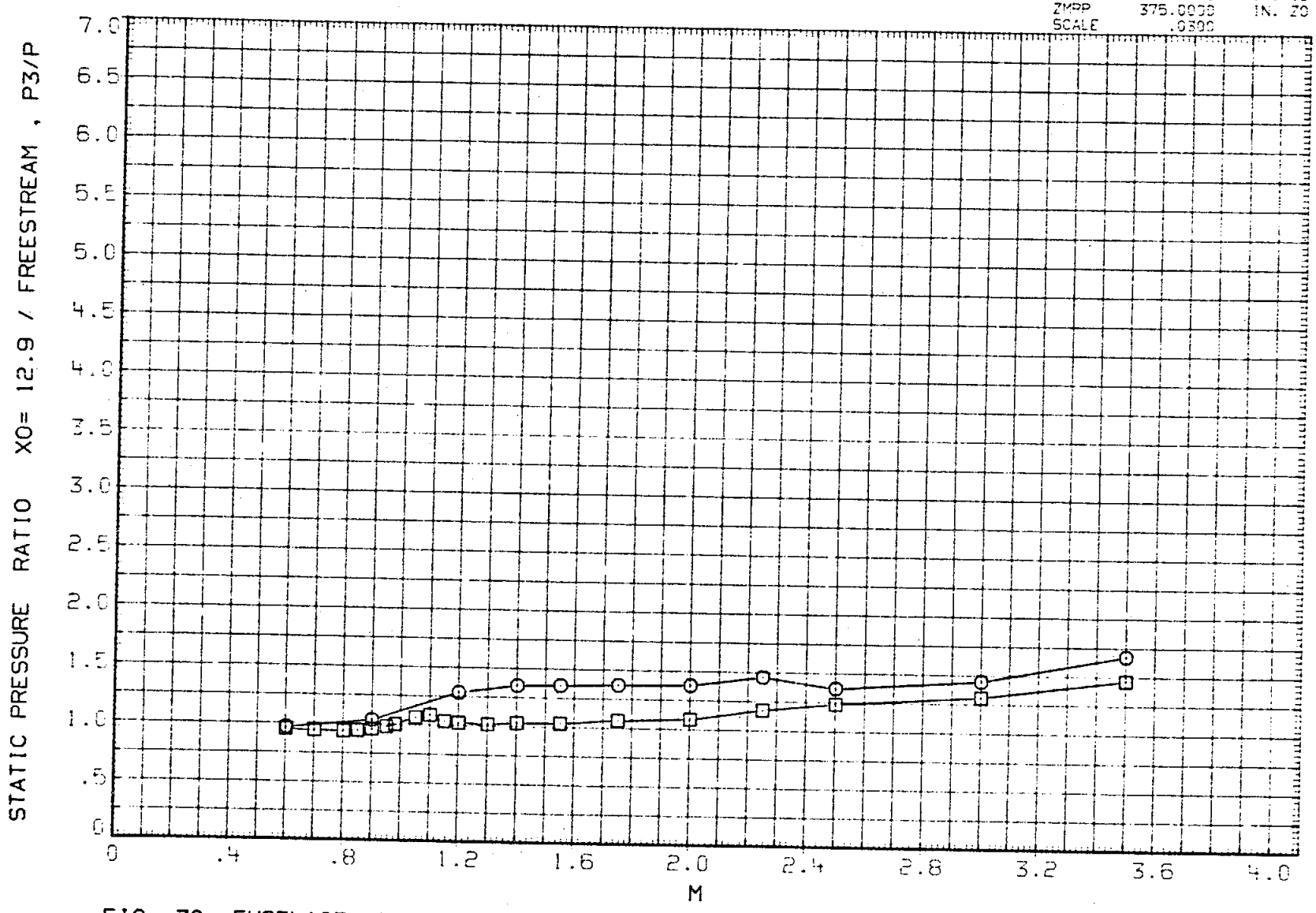


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(D)ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION
AE7B07	○	ARC 11-97-87-094 OA161 ORBITER + RAKES
AE7R17	□	ARC 11-97-87-094 OA161 ORBITER
AE7B22	◇	DATA NOT AVAILABLE
AE7B27	△	DATA NOT AVAILABLE

BETA	ELEVON	AILRON	BDFLAP
5.000	.000	.000	-7.170
5.000	.000	.000	-7.170
5.000	.000	2.500	-7.170
5.000	.000	5.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	935.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

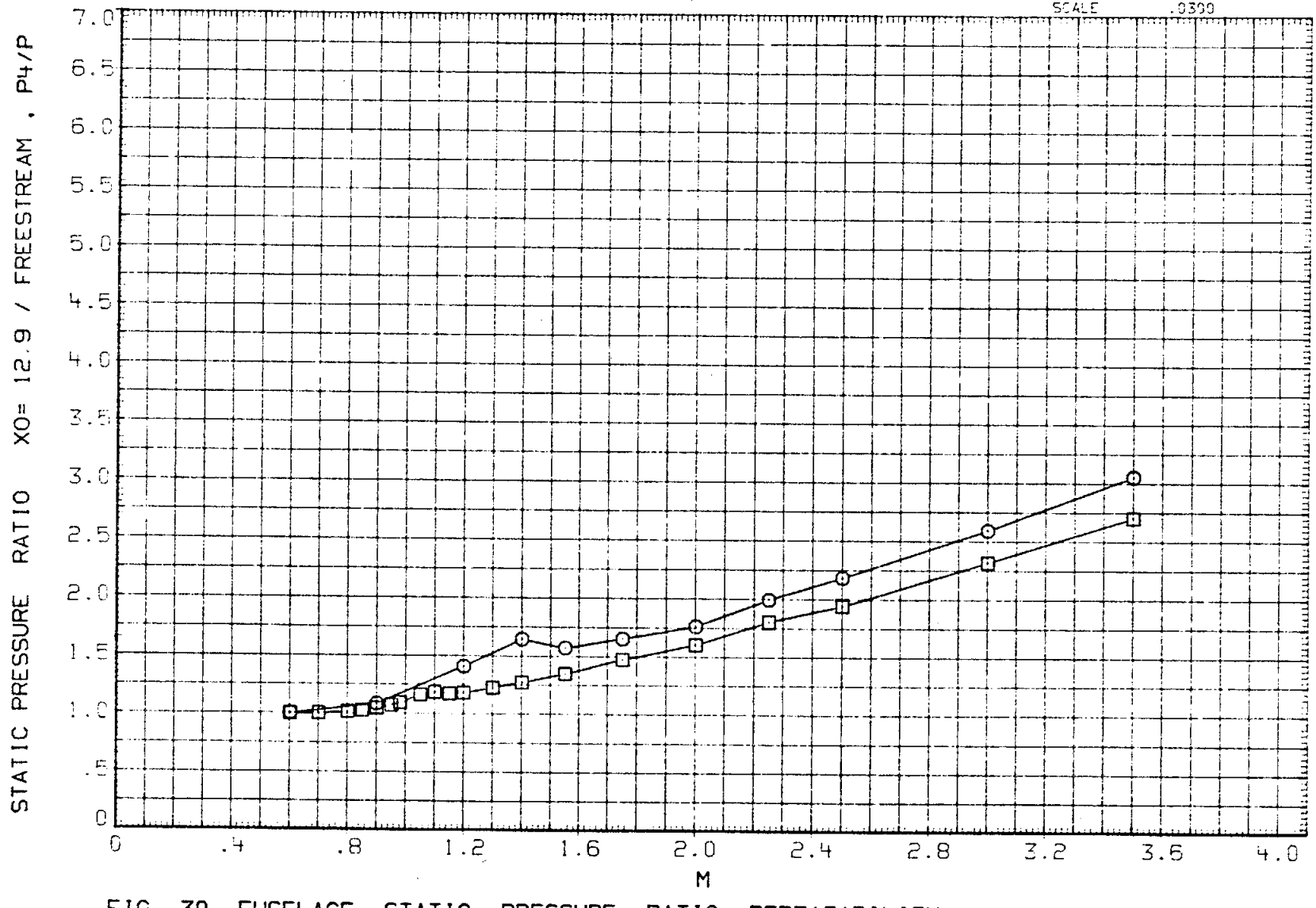


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(D)ALPHA = 18.00

DATA SET	SYMBOL	CONFIGURATION
AE7807	○	ARC 11-97-87-094 OA161 ORBITER + RAKES
AE7817	□	ARC 11-97-87-094 OA161 ORBITER
AE7822	◇	DATA NOT AVAILABLE
AE7827	△	DATA NOT AVAILABLE

BETA	ELEVON	AILRON	BDFLAP
5.000	.000	.000	-7.170
5.000	.000	.000	-7.170
5.000	.000	2.500	-7.170
5.000	.000	5.000	-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

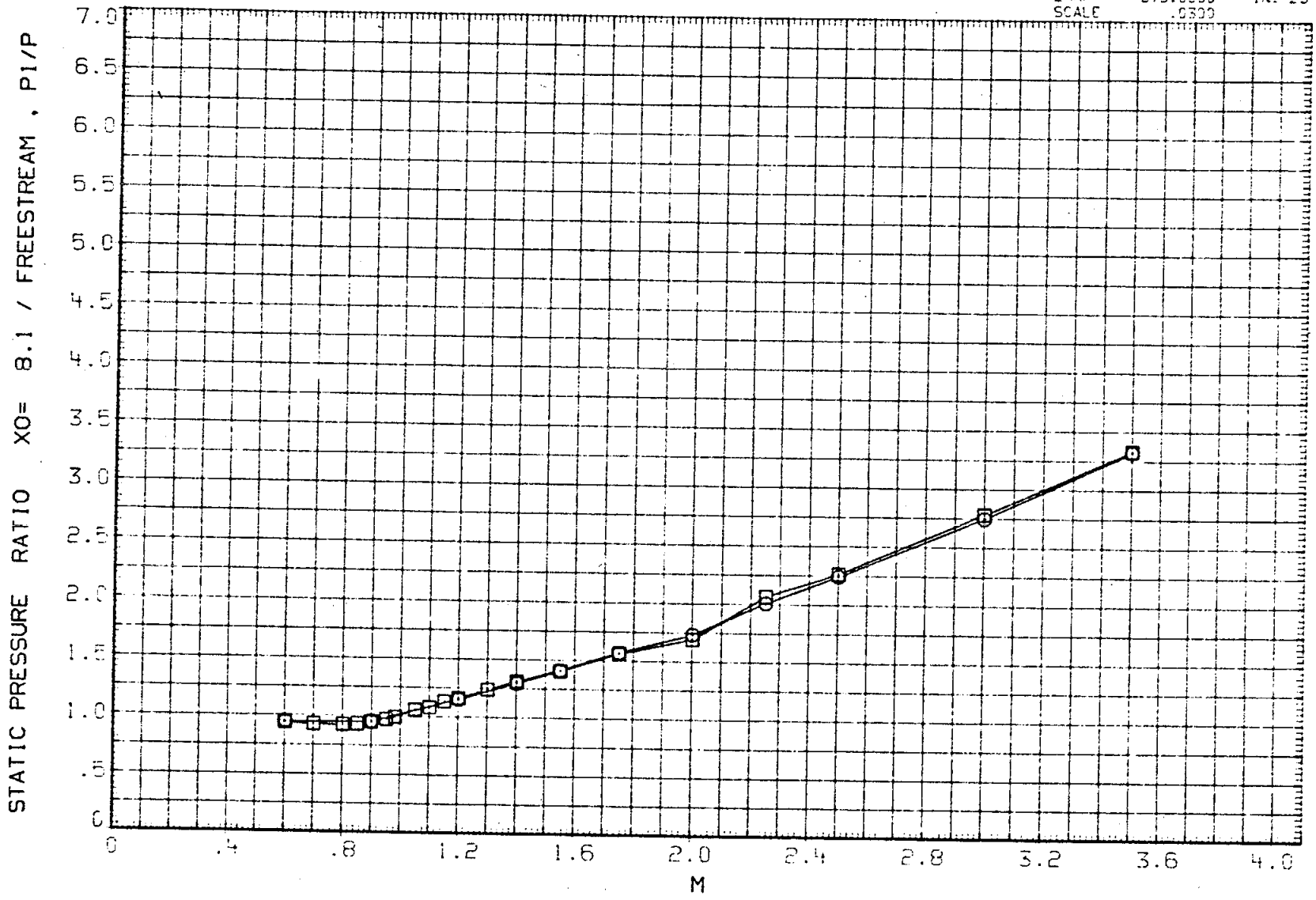


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(E)ALPHA = 24.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
AE7B07	○	ARC 11-97-67-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
AE7B17	□	ARC 11-97-67-094 OA161 ORBITER	5.000	.000	.000	-7.170
AE7B22	◇	DATA NOT AVAILABLE	5.000	.000	2.500	-7.170
AE7B27	△	DATA NOT AVAILABLE	5.000	.000	5.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BPLF	936.8000	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

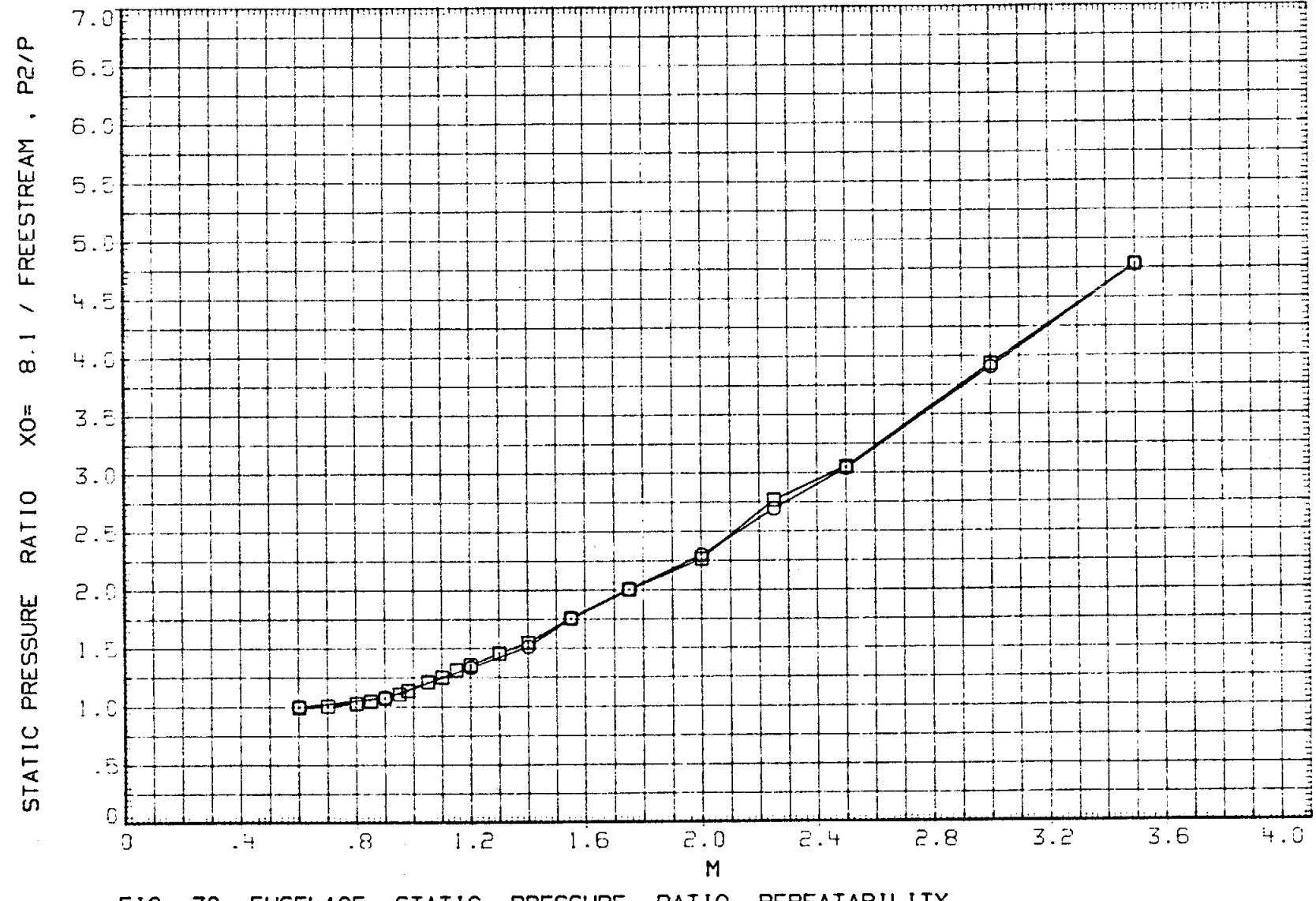


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(E)ALPHA = 24.00

DATA SET	SYMBOL	CONFIGURATION
AE7807	○	ARC 11-97-87-094 0A161 ORBITER + RAKES
AE7817	□	ARC 11-97-87-094 0A161 ORBITER
AE7822	◇	DATA NOT AVAILABLE
AE7827	△	DATA NOT AVAILABLE

BETA	ELEVON	AILRON	BDFLAP
5.000	.000	.000	-7.170
5.000	.000	.000	-7.170
5.000	.000	2.500	-7.170
5.000	.000	5.000	-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

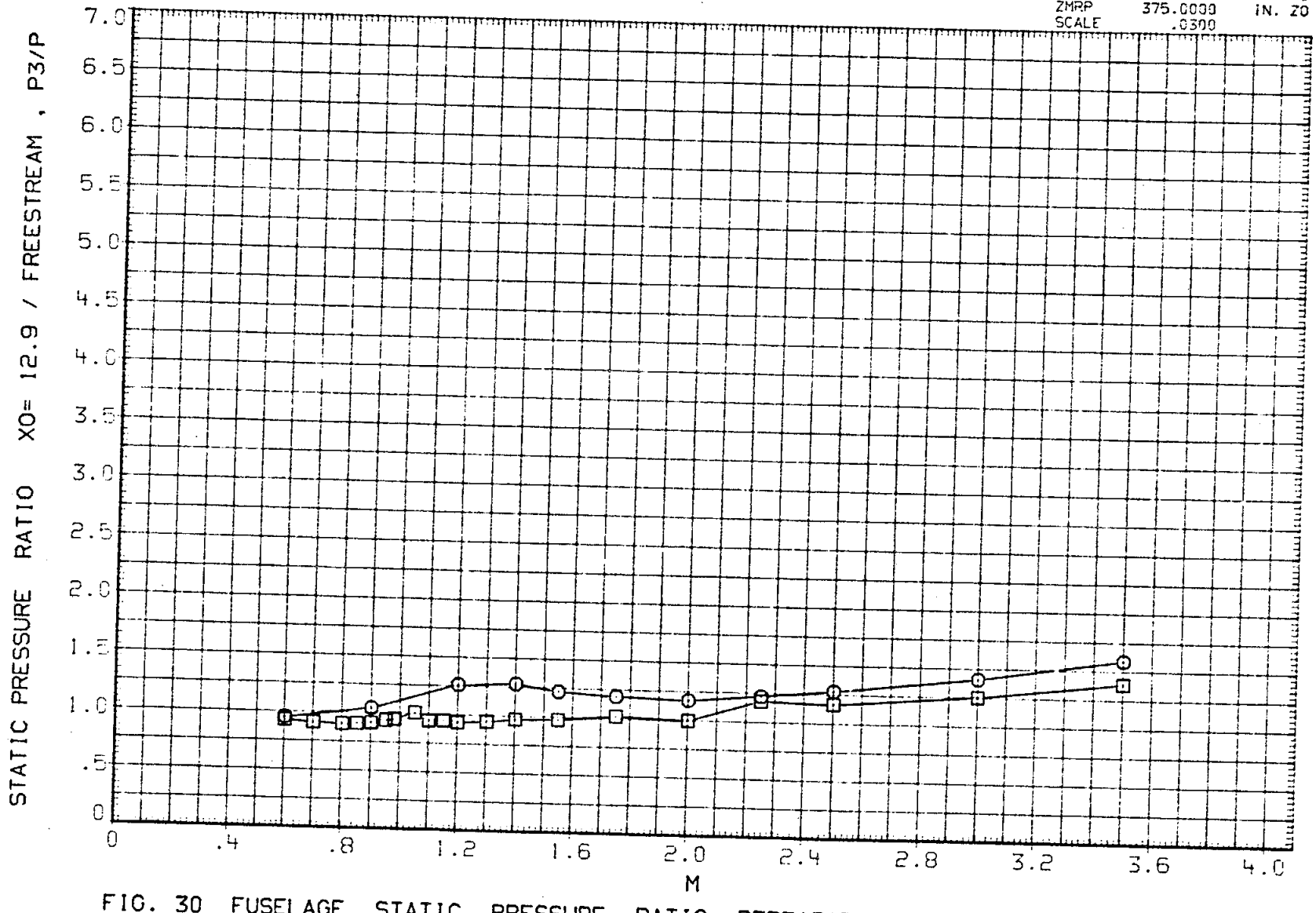


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(E) ALPHA = 24.00

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
AE7B07	○	ARC 11-97-87-094 OA161 ORBITER + RAKES	5.000	.000	.000	-7.170
AE7B17	□	ARC 11-97-87-094 OA161 ORBITER	5.000	.000	.000	-7.170
AE7B22	◇	DATA NOT AVAILABLE	5.000	.000	2.500	-7.170
AE7B27	△	DATA NOT AVAILABLE	5.000	.000	5.000	-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

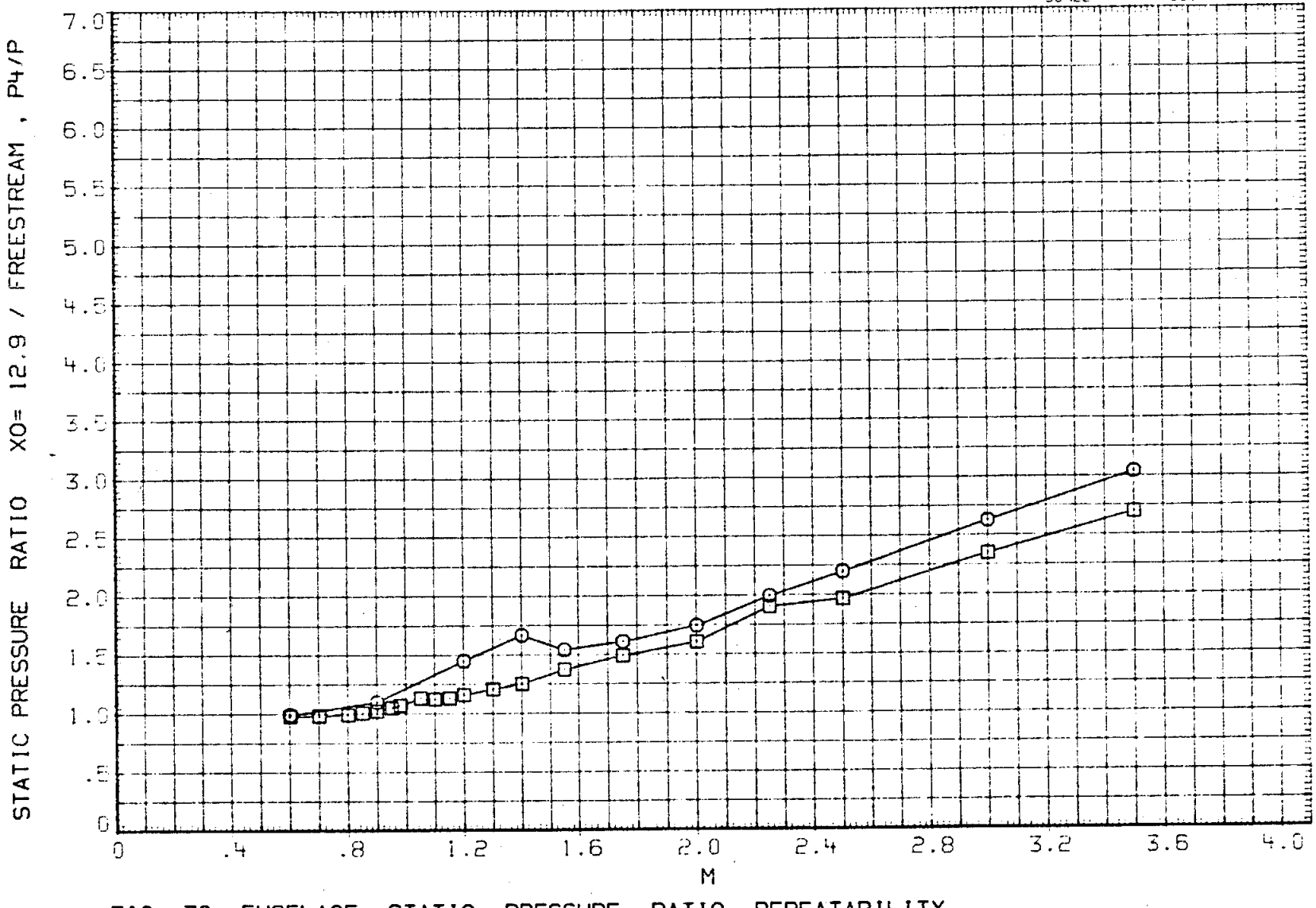


FIG. 30 FUSELAGE STATIC PRESSURE RATIO REPEATABILITY

(E)ALPHA = 24.00

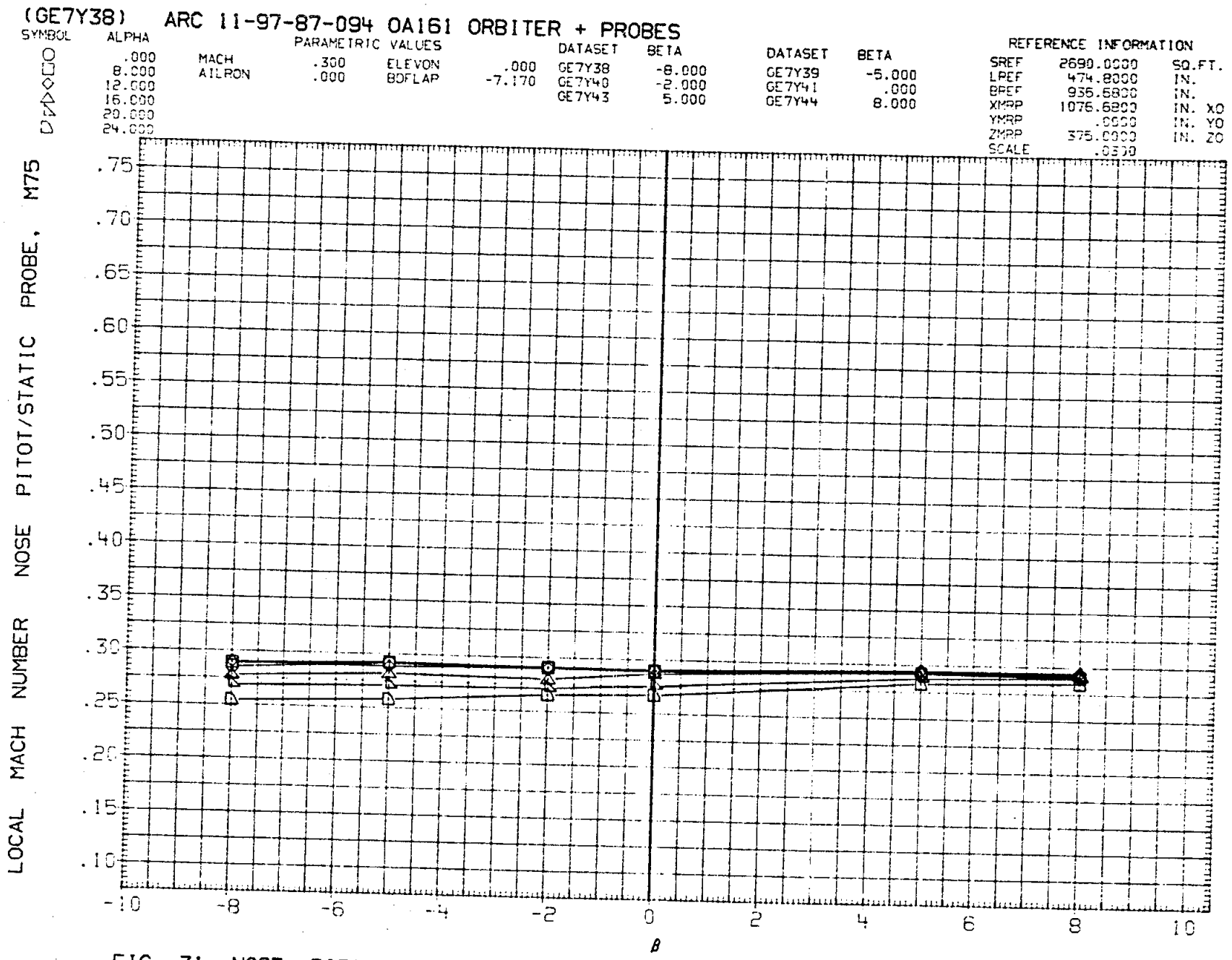


FIG. 31 NOSE PITOT/STATIC PROBE CHARACTERISTICS VERSUS BETA AT VARIOUS ALPHAS

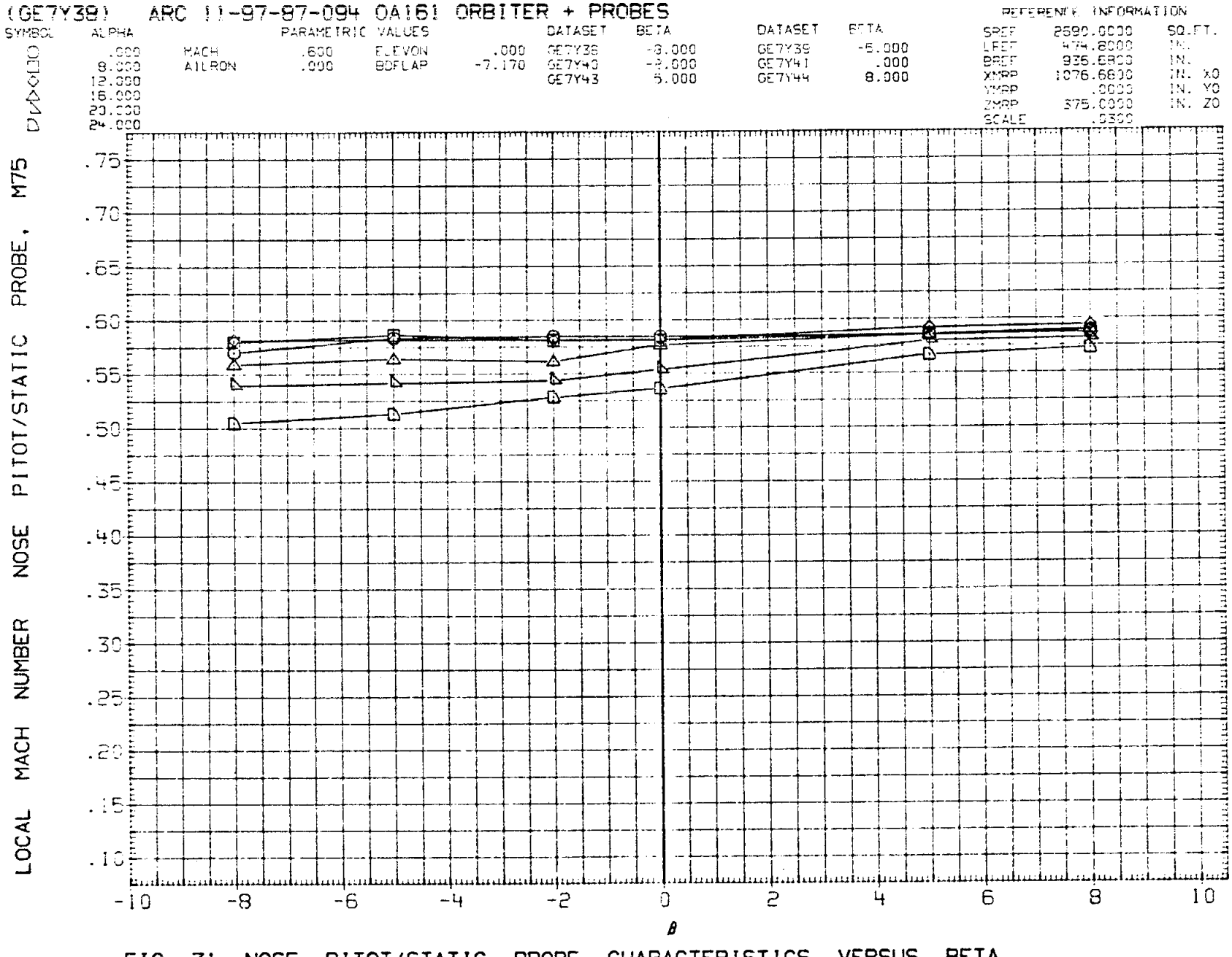


FIG. 31 NOSE PITOT/STATIC PROBE CHARACTERISTICS VERSUS BETA AT VARIOUS ALPHAS

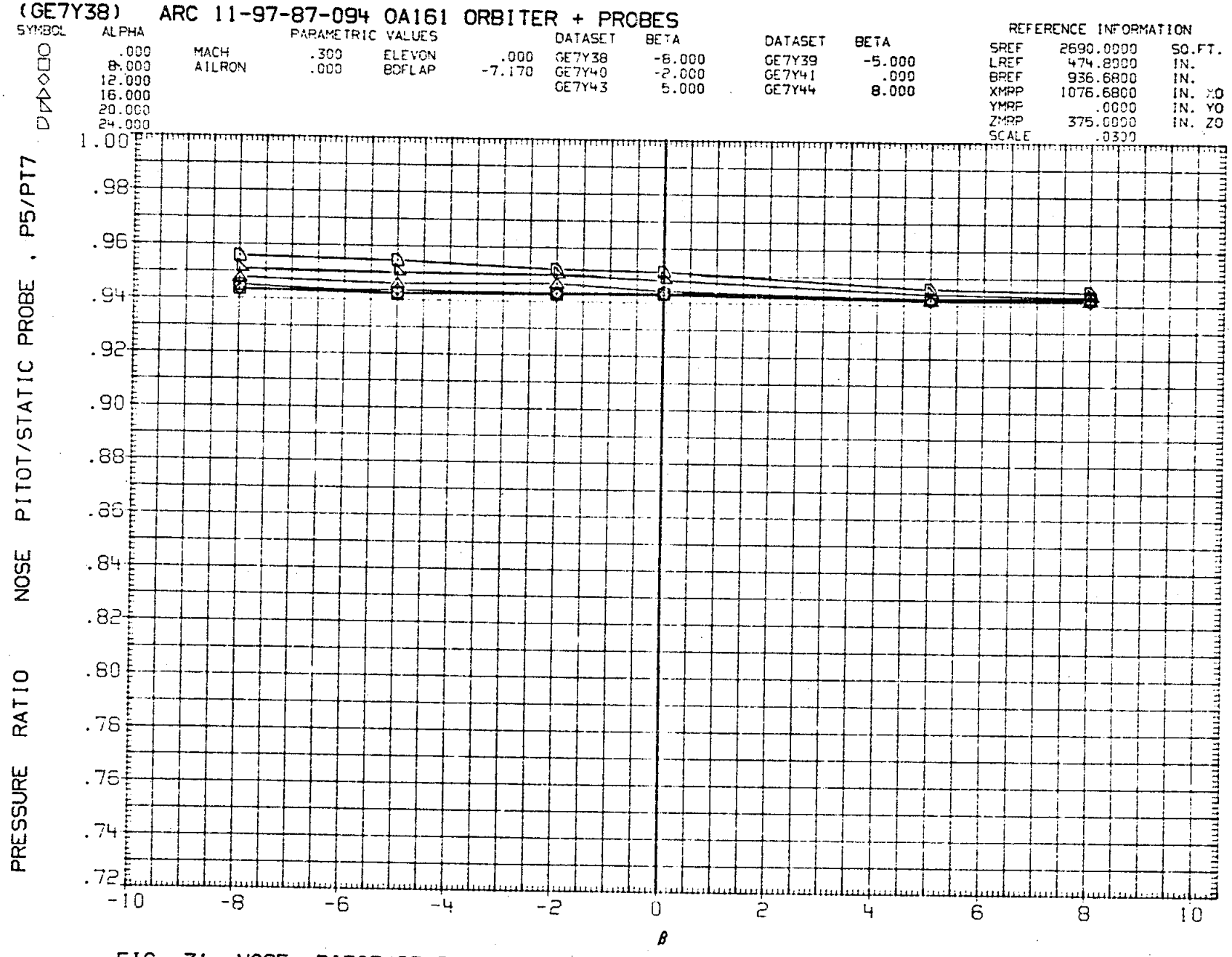


FIG. 31 NOSE PITOT/STATIC PROBE CHARACTERISTICS VERSUS BETA AT VARIOUS ALPHAS

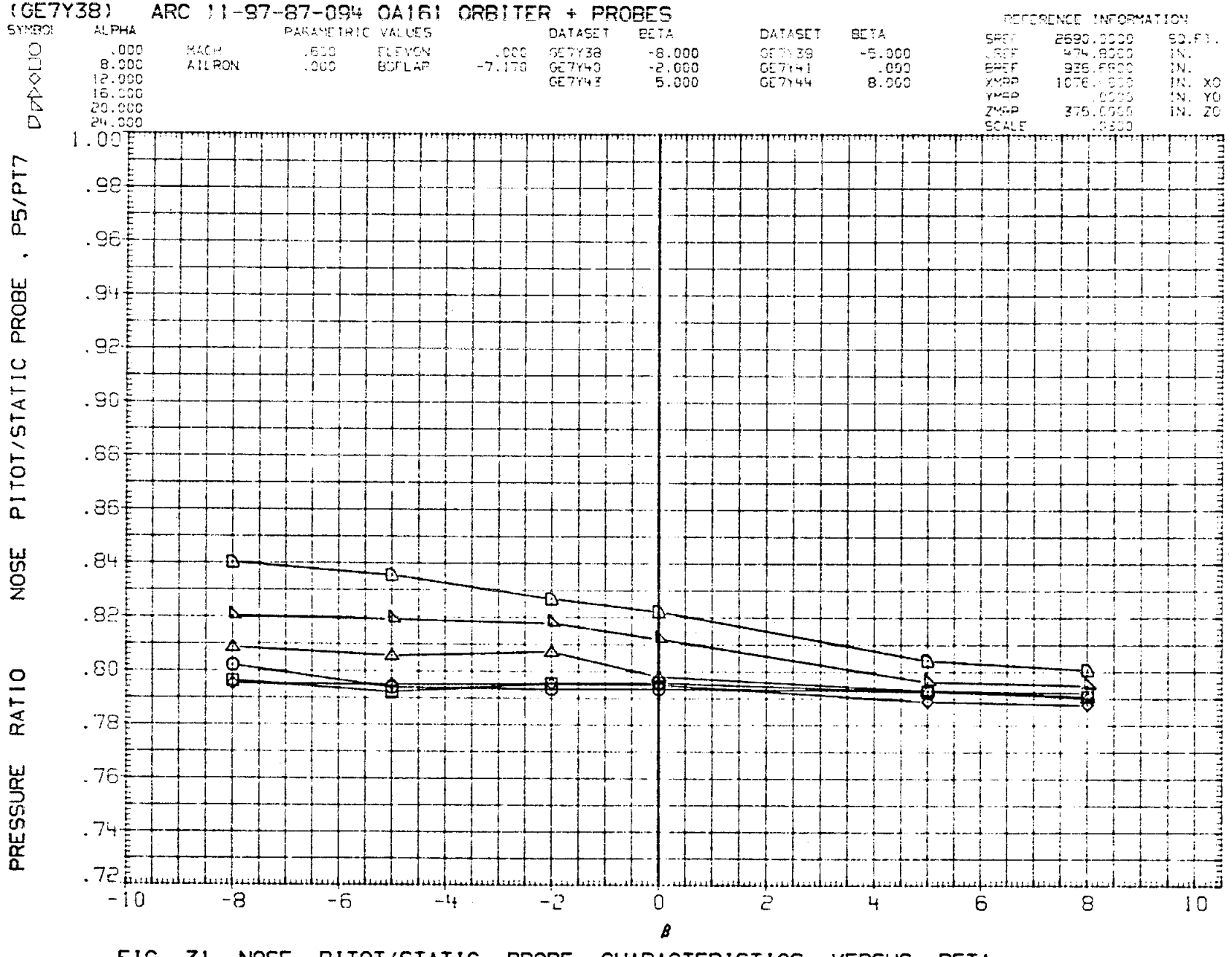


FIG. 31 NOSE PITOT/STATIC PROBE CHARACTERISTICS VERSUS BETA AT VARIOUS ALPHAS

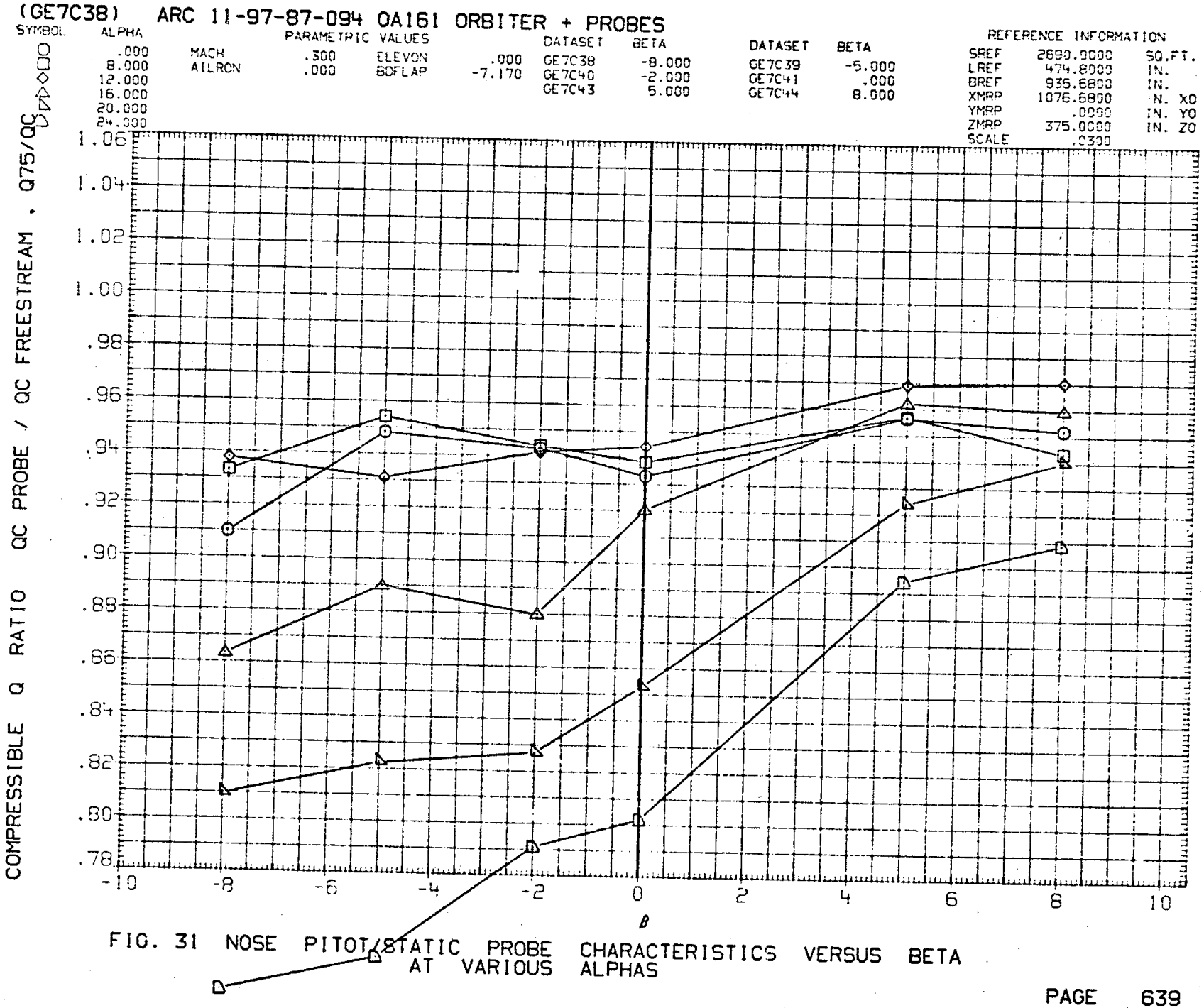


FIG. 31 NOSE PITOT/STATIC PROBE CHARACTERISTICS VERSUS BETA AT VARIOUS ALPHAS

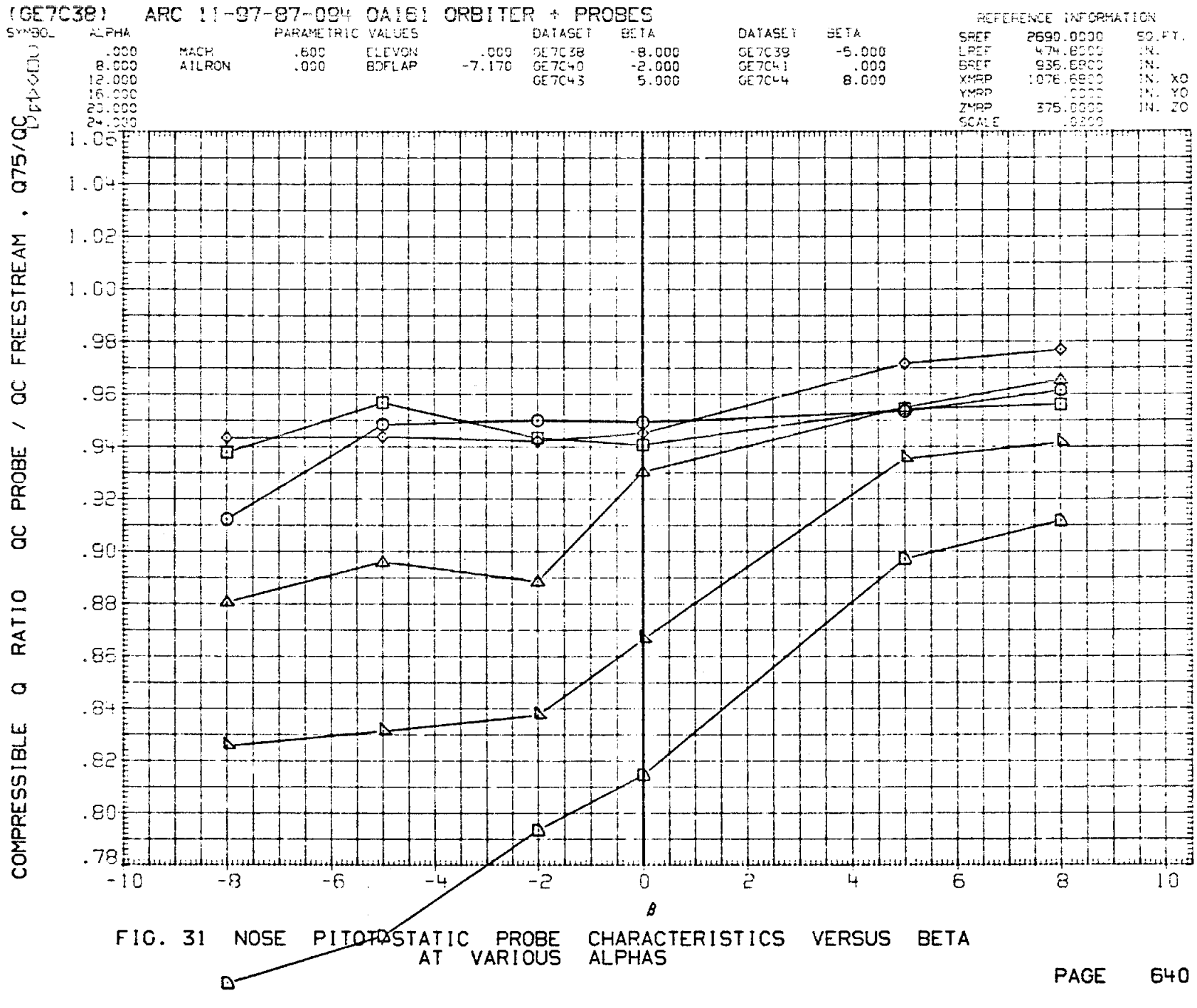


FIG. 31 NOSE PITOT-STATIC PROBE CHARACTERISTICS VERSUS BETA AT VARIOUS ALPHAS

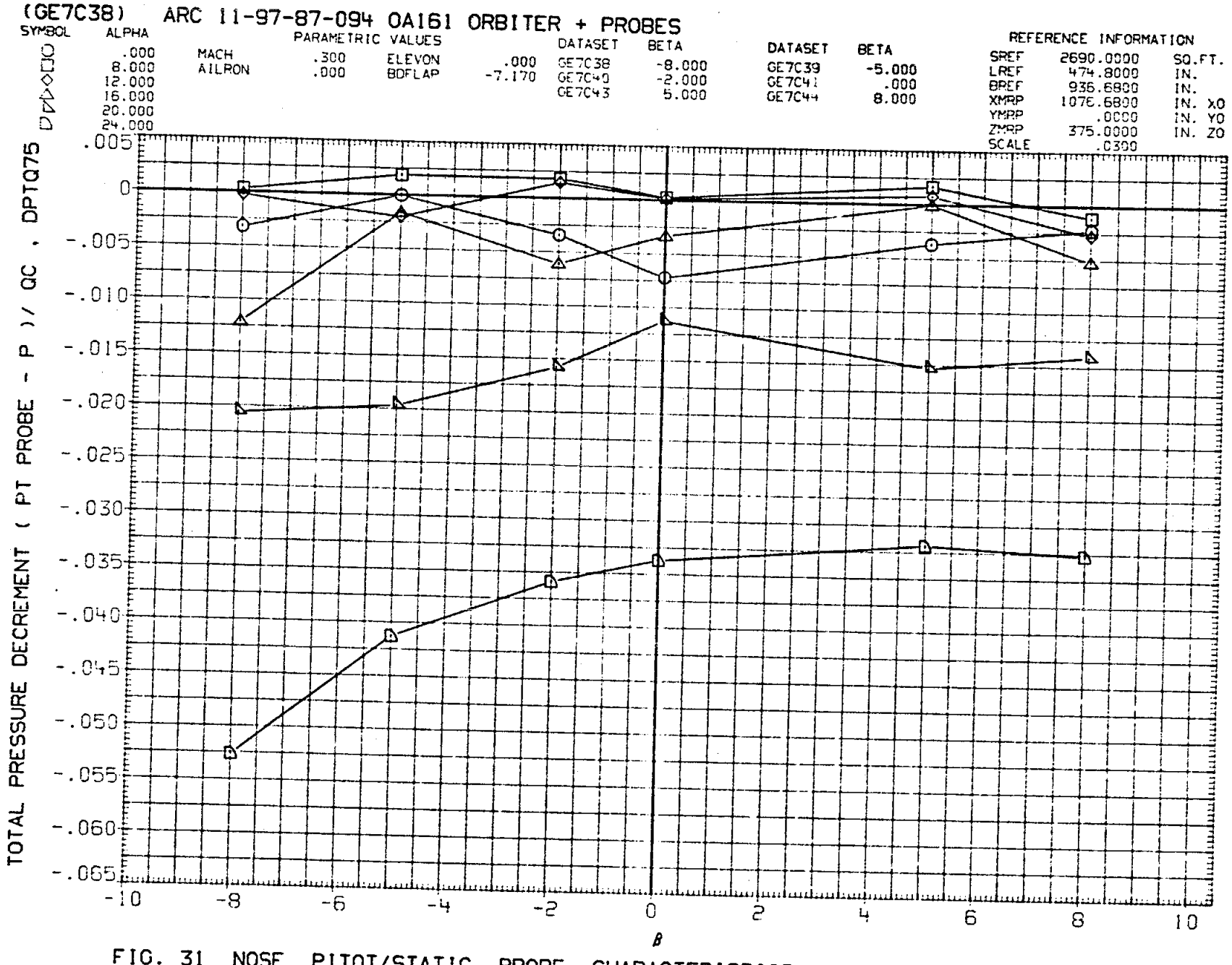


FIG. 31 NOSE PITOT/STATIC PROBE CHARACTERISTICS VERSUS BETA AT VARIOUS ALPHAS

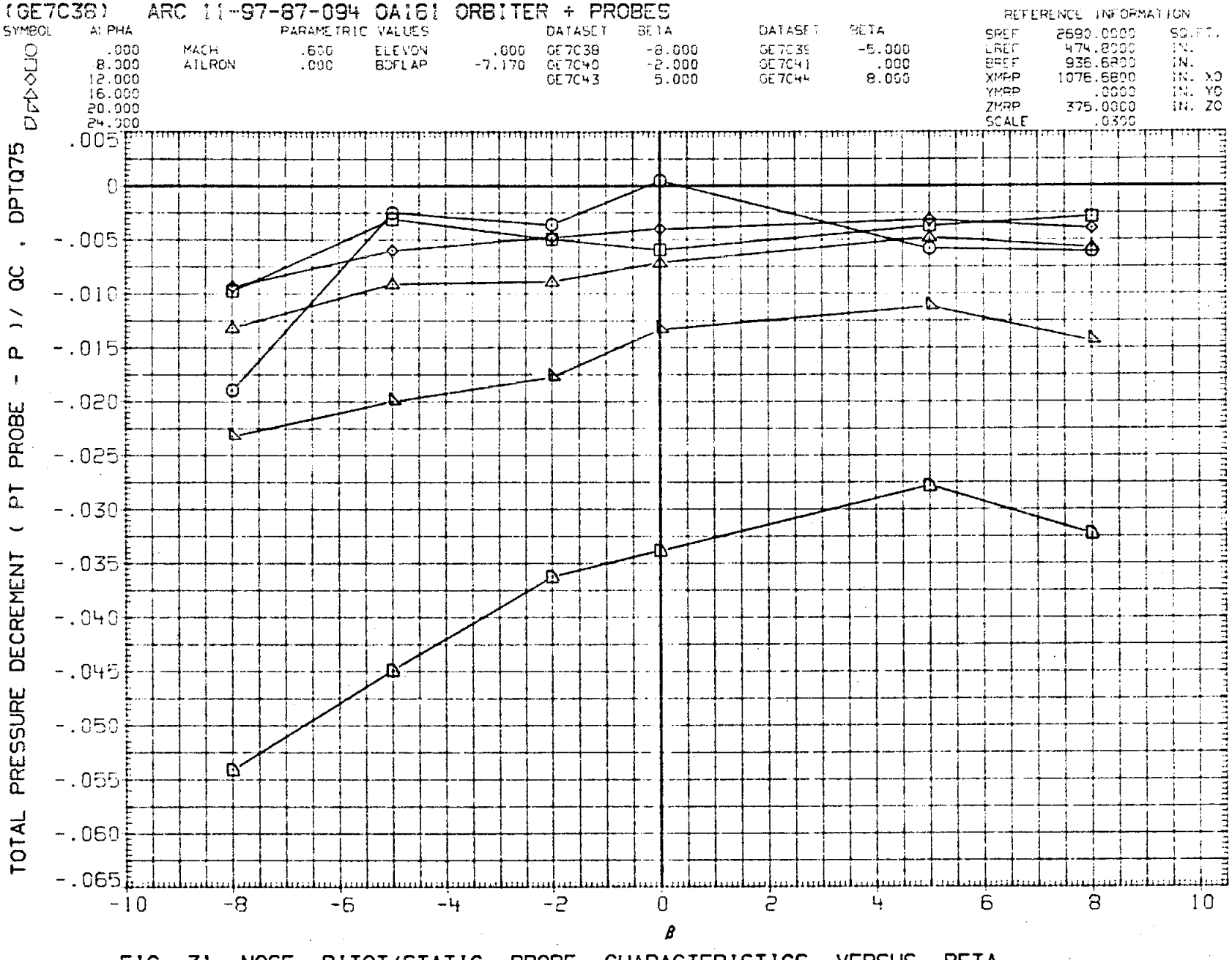


FIG. 31 NOSE PITOT/STATIC PROBE CHARACTERISTICS VERSUS BETA AT VARIOUS ALPHAS

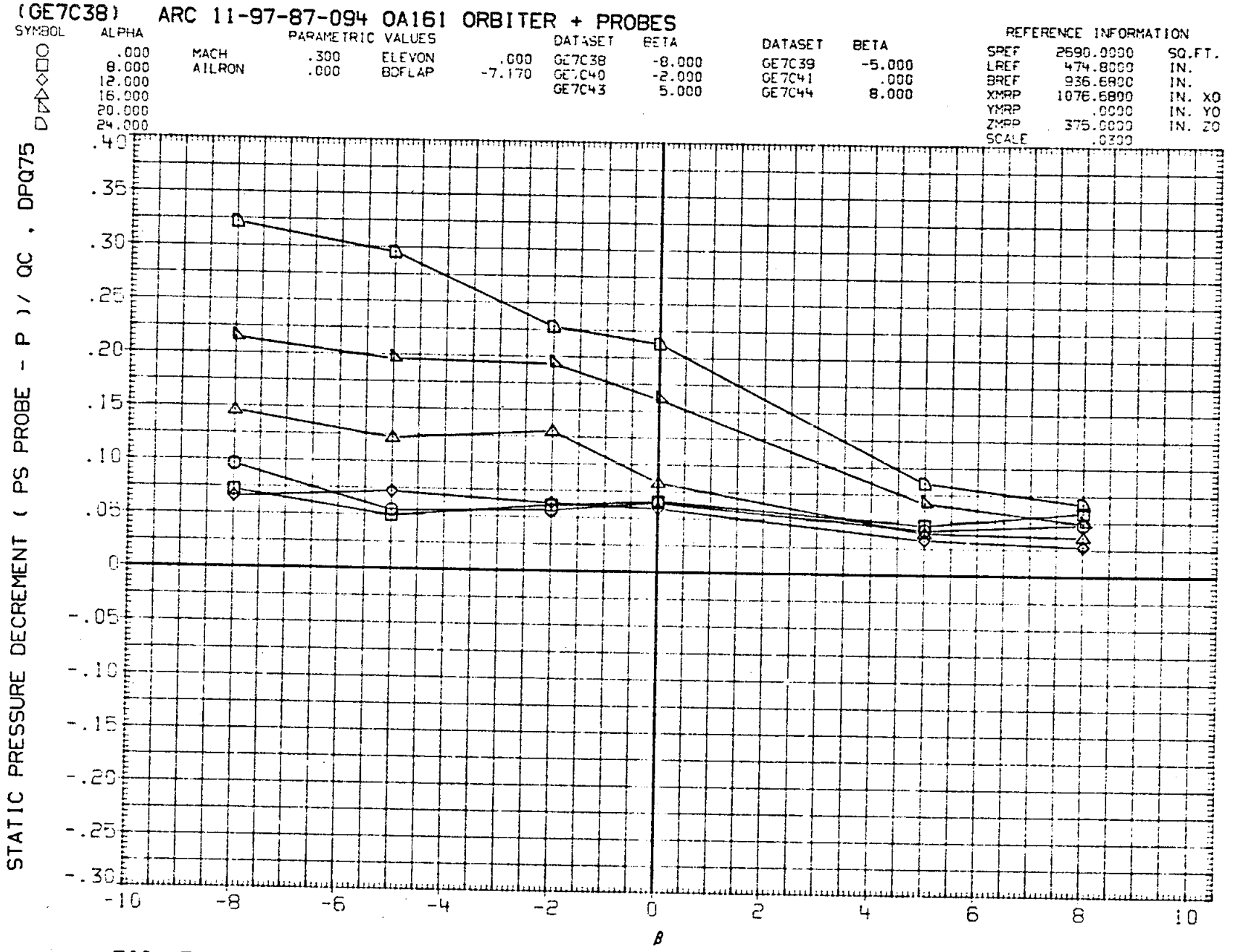


FIG. 31 NOSE PITOT/STATIC PROBE CHARACTERISTICS VERSUS BETA AT VARIOUS ALPHAS

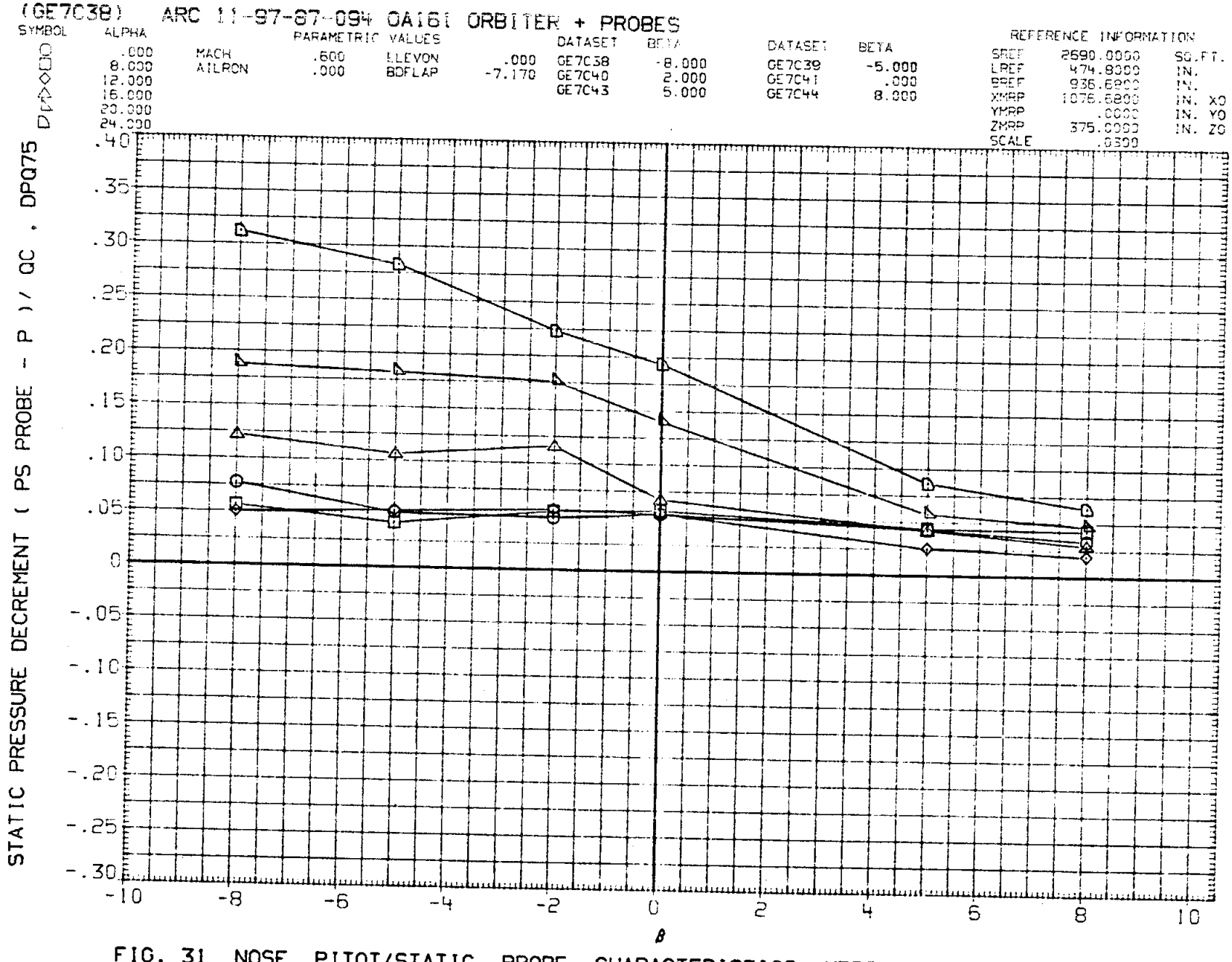


FIG. 31 NOSE PITOT/STATIC PROBE CHARACTERISTICS VERSUS BETA AT VARIOUS ALPHAS

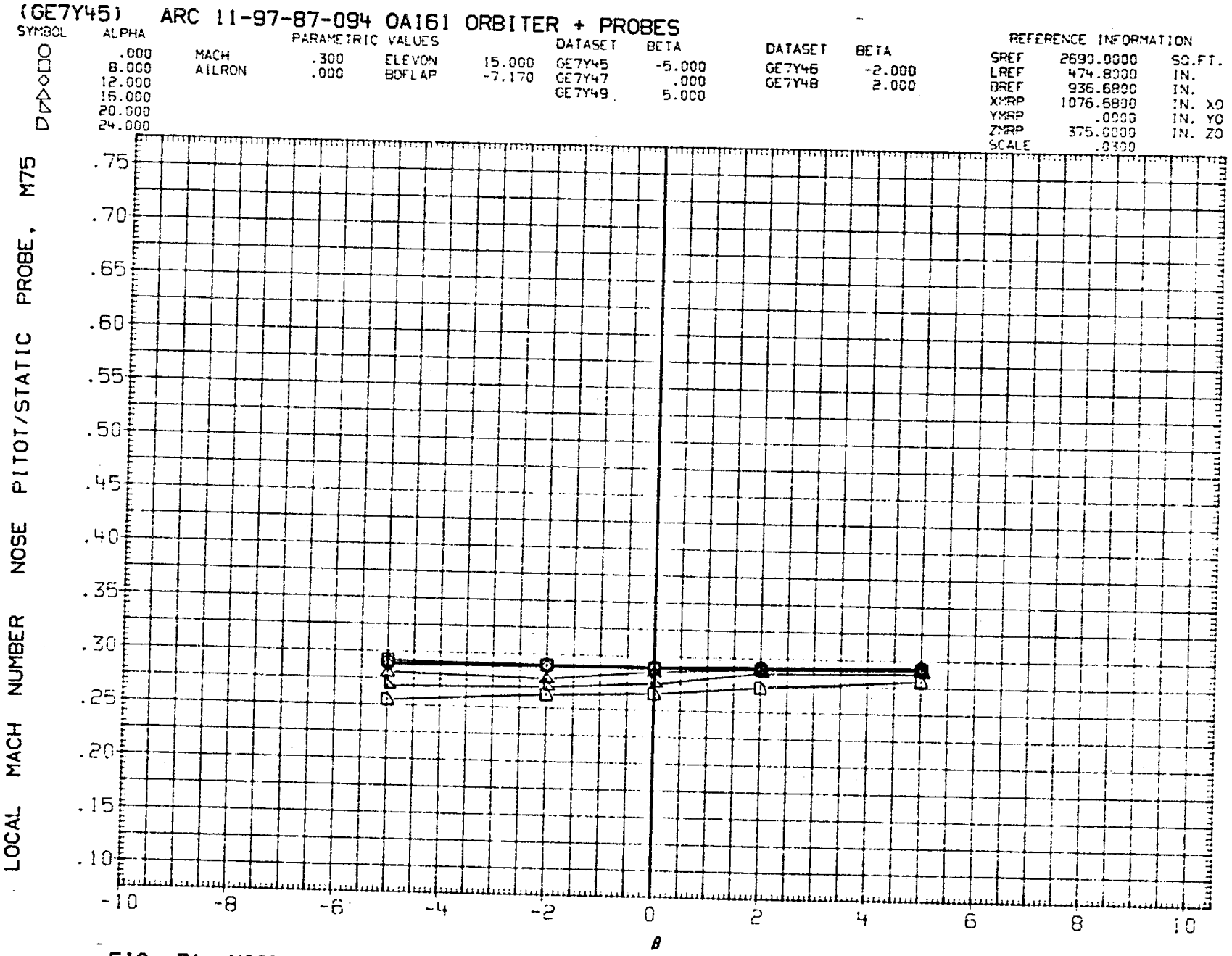


FIG. 31 NOSE PITOT/STATIC PROBE CHARACTERISTICS VERSUS BETA AT VARIOUS ALPHAS

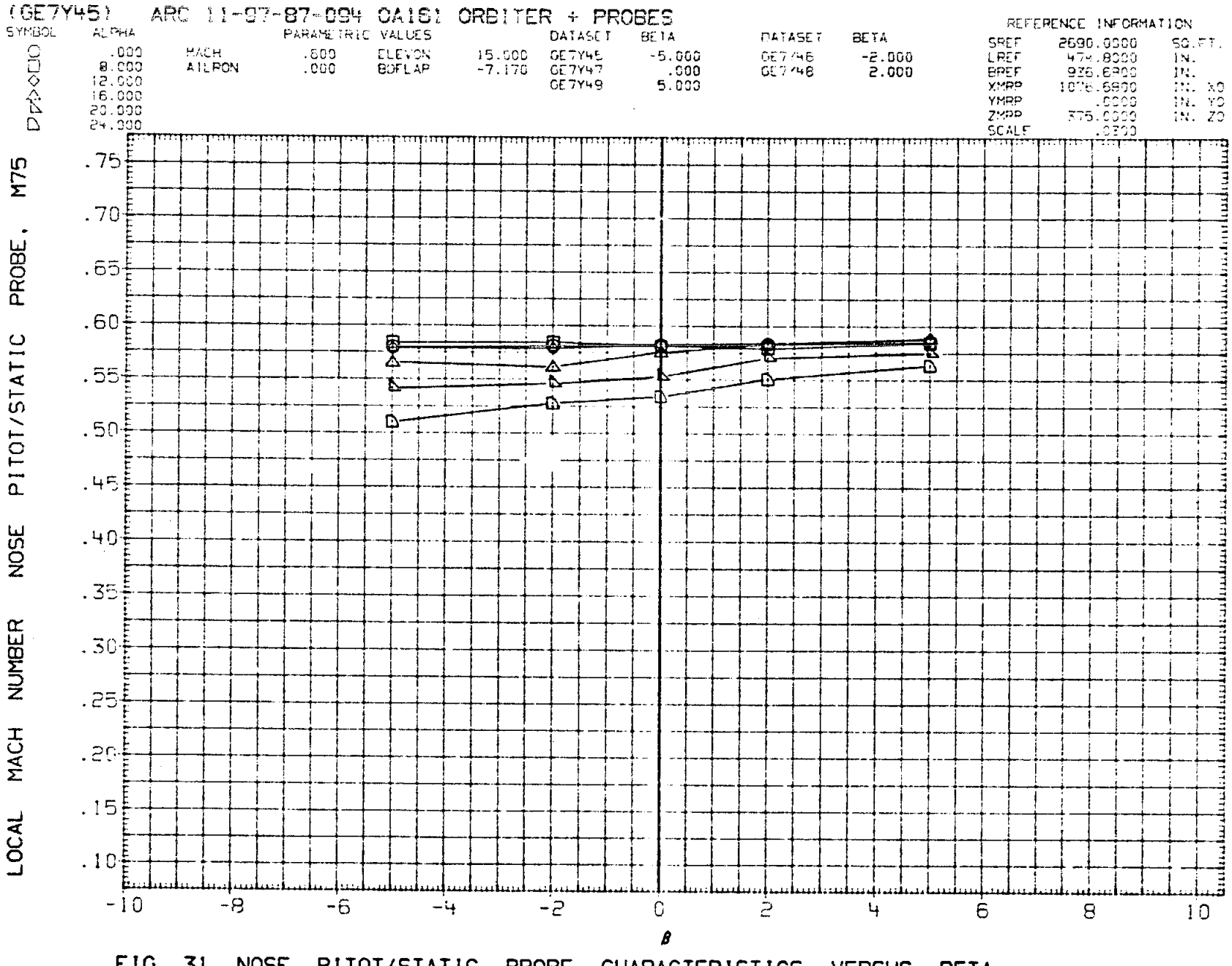


FIG. 31 NOSE PITOT/STATIC PROBE CHARACTERISTICS VERSUS BETA AT VARIOUS ALPHAS

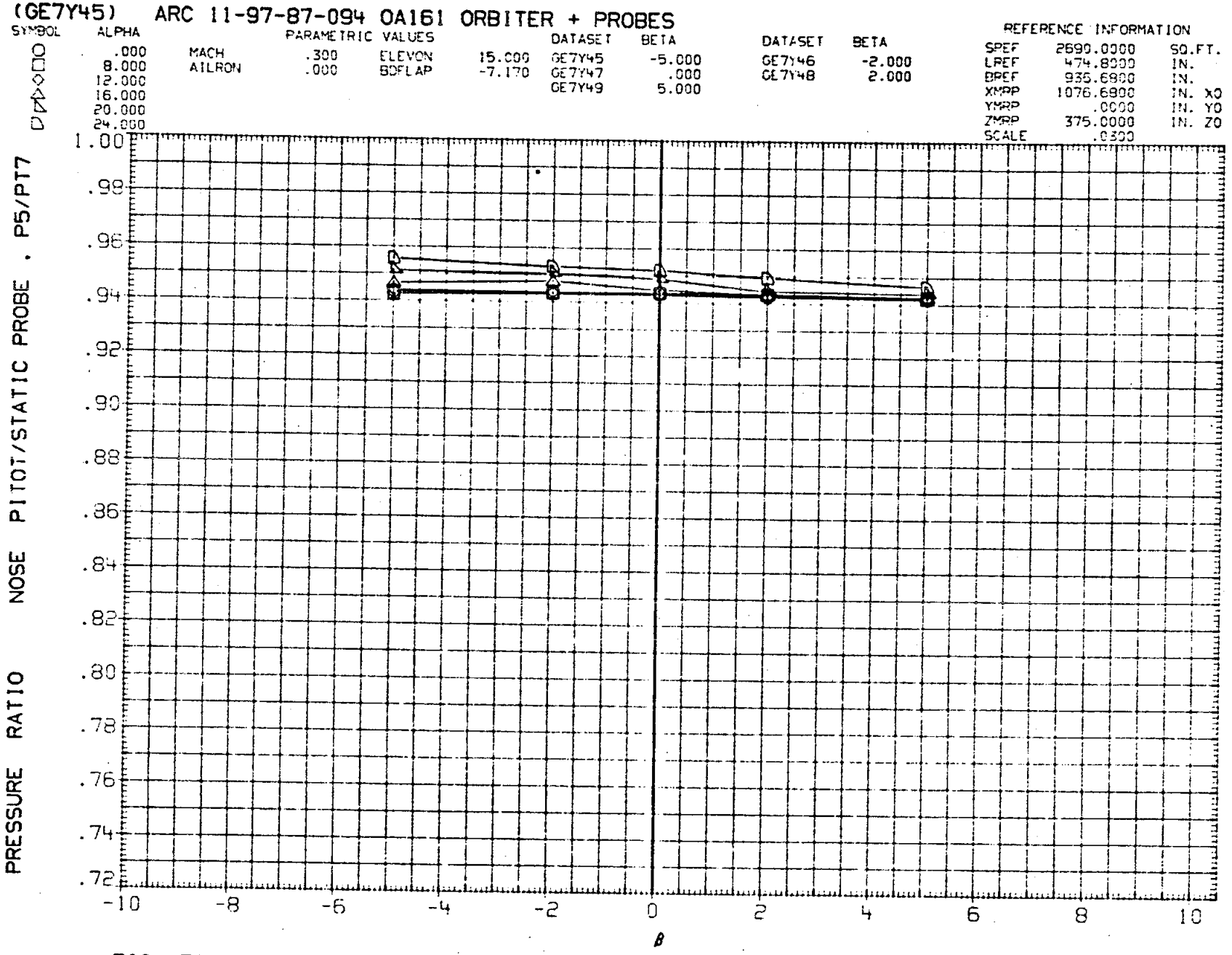


FIG. 31 NOSE PITOT/STATIC PROBE CHARACTERISTICS VERSUS BETA AT VARIOUS ALPHAS

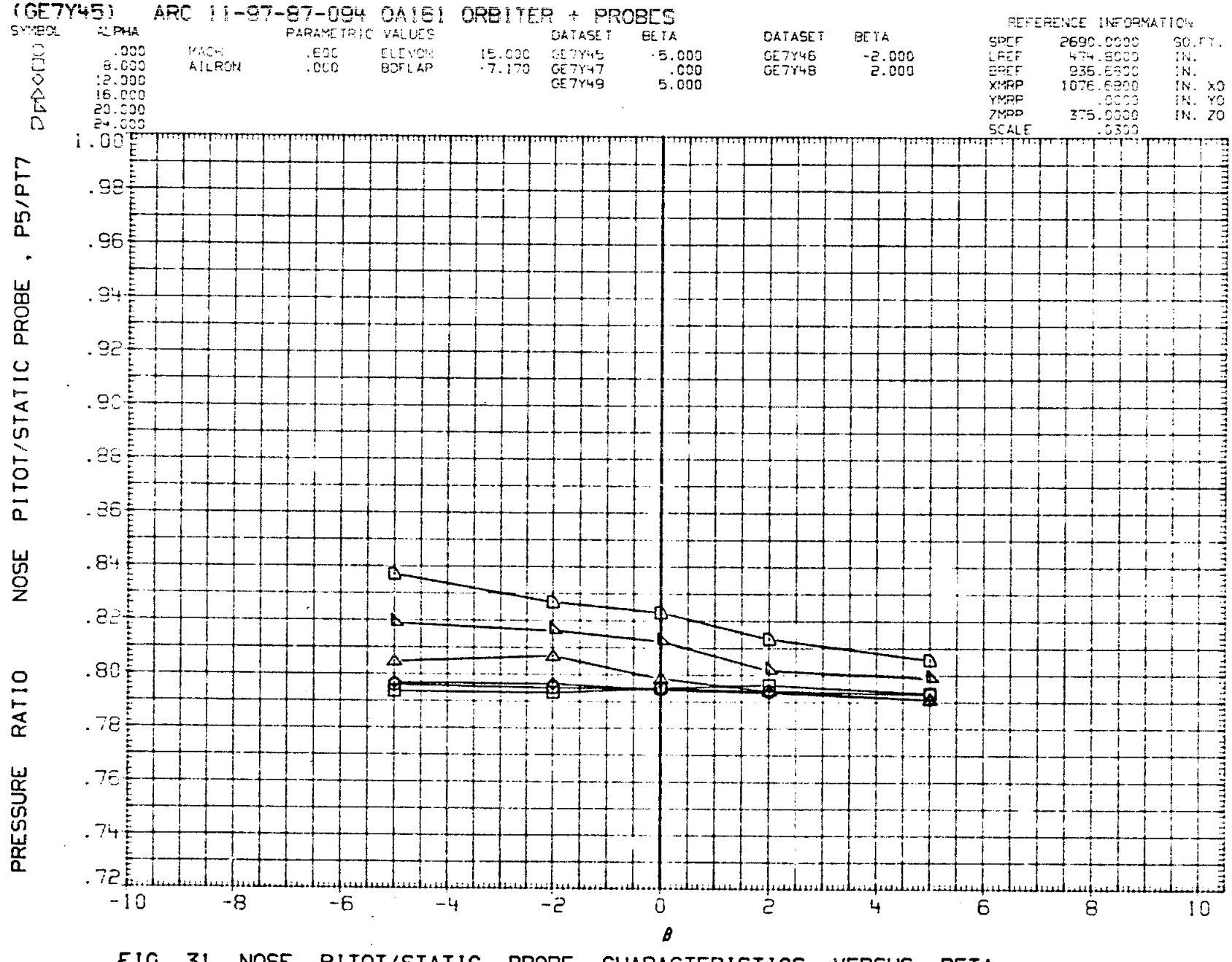


FIG. 31 NOSE PITOT/STATIC PROBE CHARACTERISTICS VERSUS BETA AT VARIOUS ALPHAS

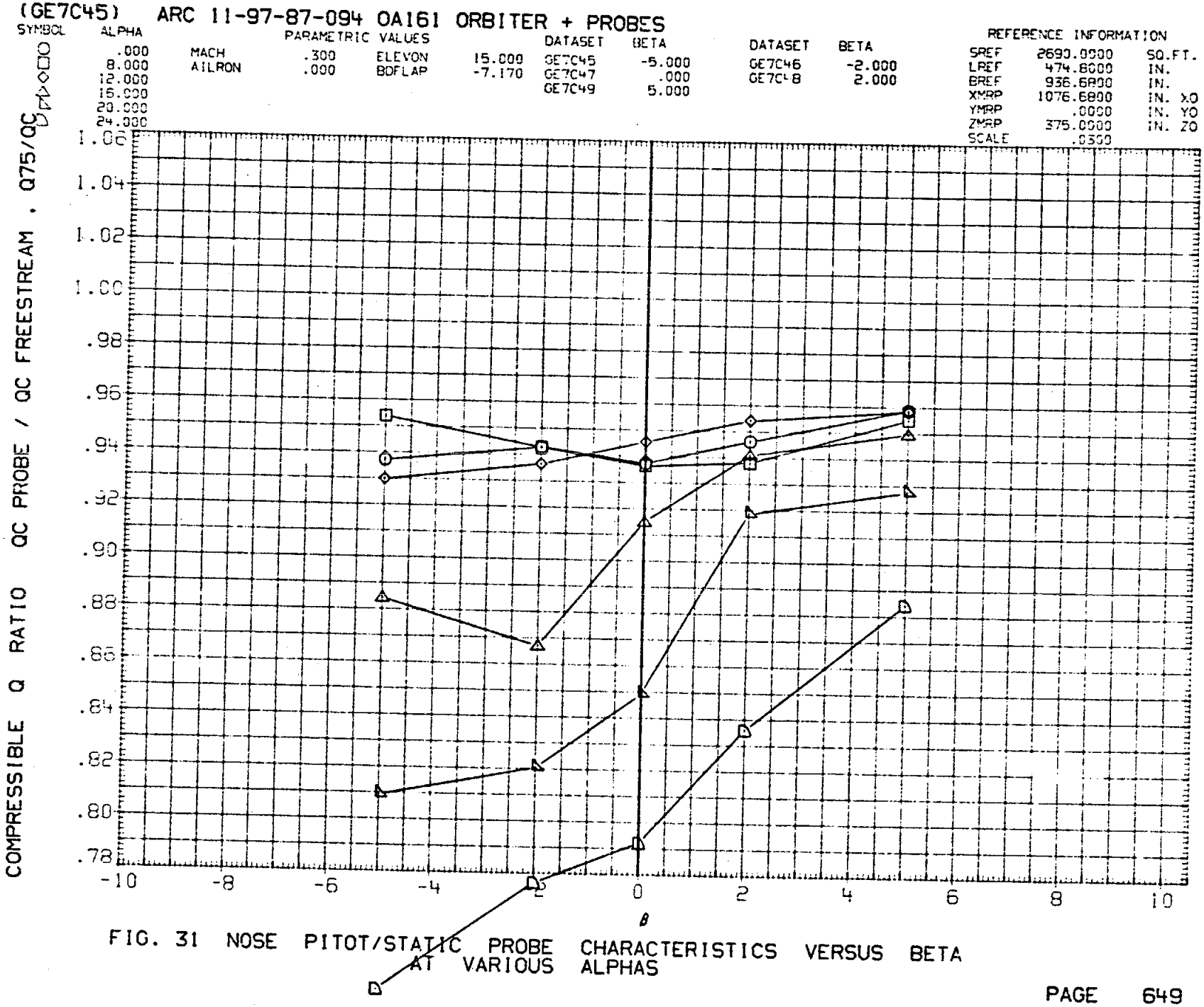


FIG. 31 NOSE PITOT/STATIC PROBE CHARACTERISTICS VERSUS BETA AT VARIOUS ALPHAS

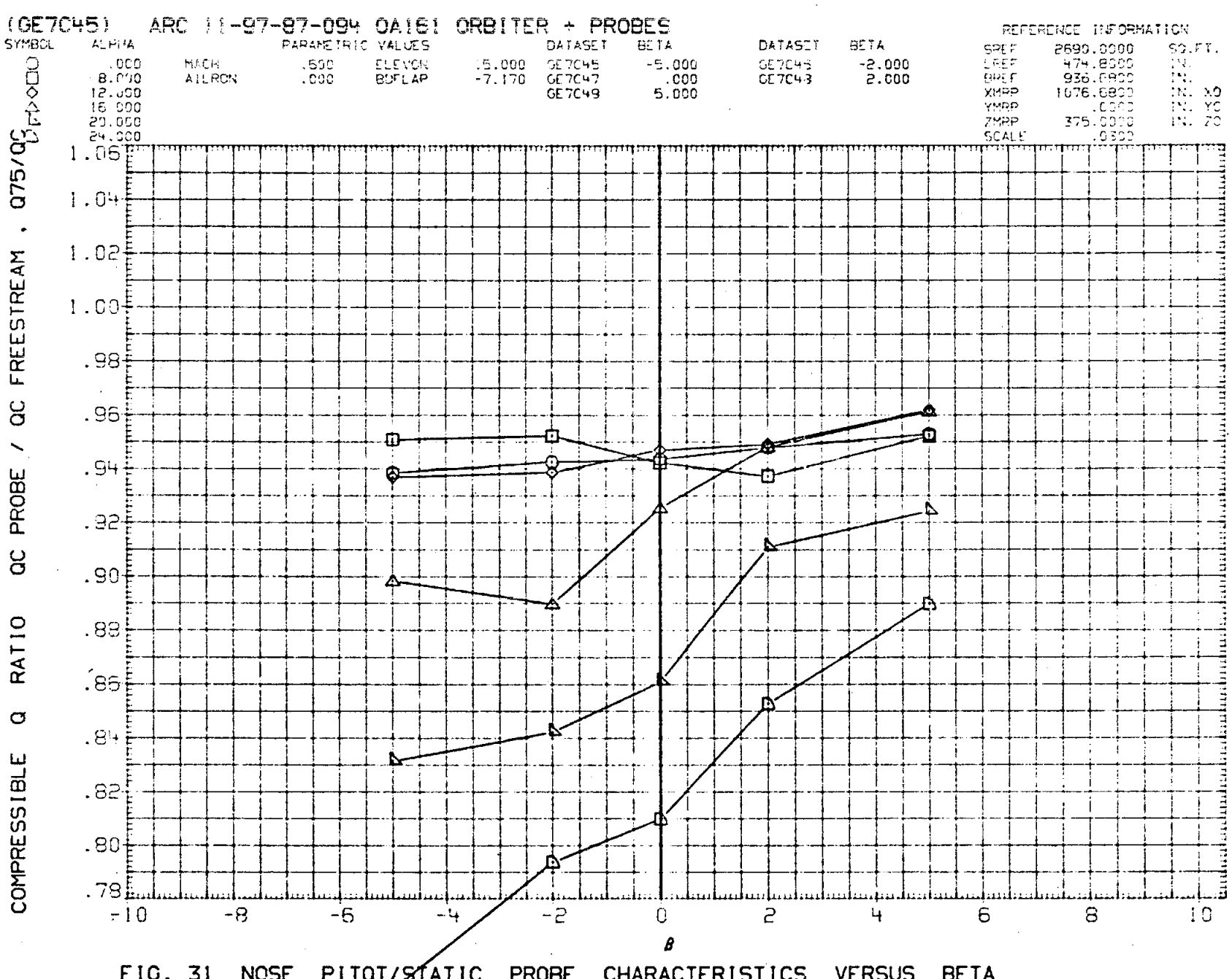


FIG. 31 NOSE PITOT/STATIC PROBE CHARACTERISTICS VERSUS BETA AT VARIOUS ALPHAS

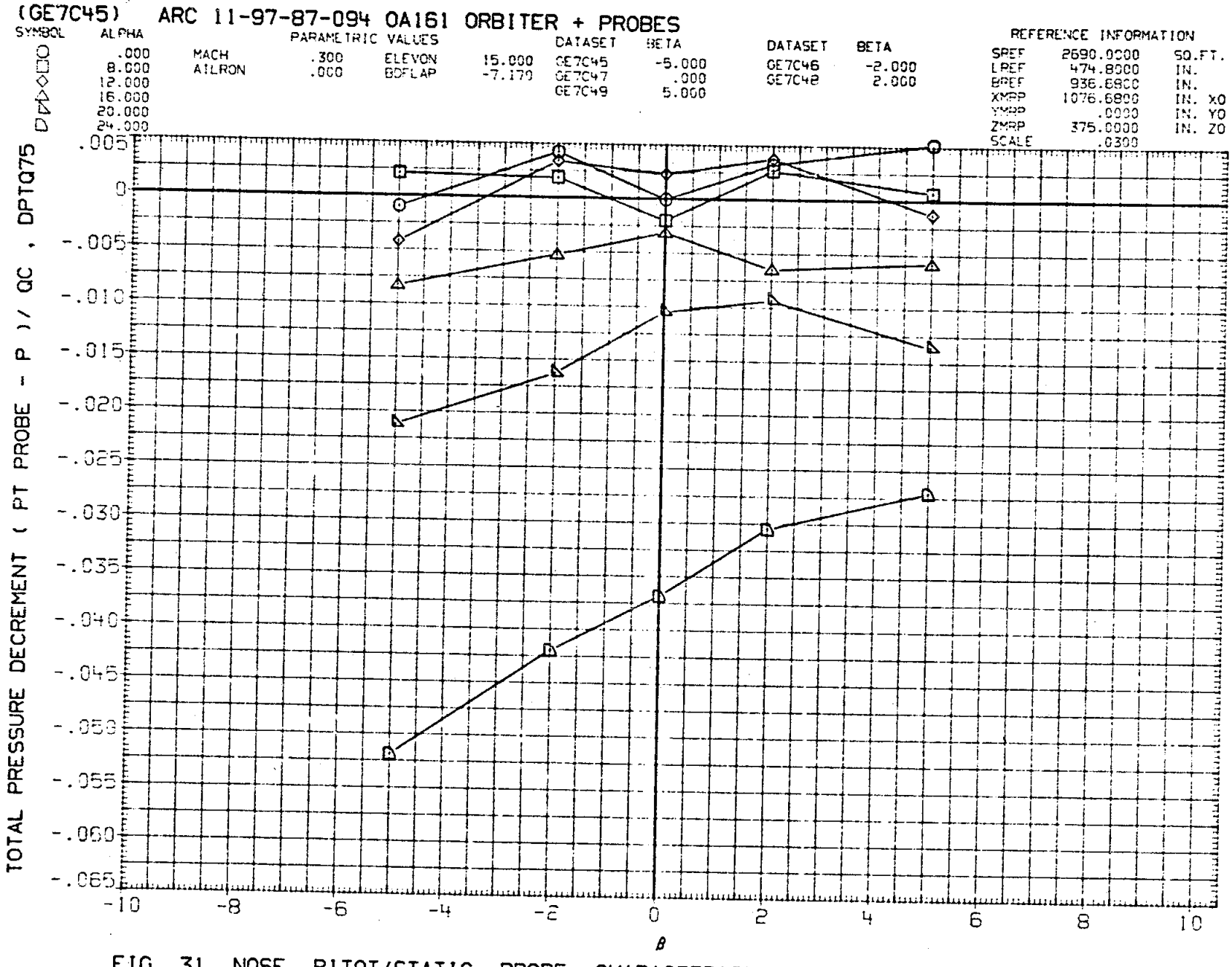


FIG. 31 NOSE PITOT/STATIC PROBE CHARACTERISTICS VERSUS BETA AT VARIOUS ALPHAS

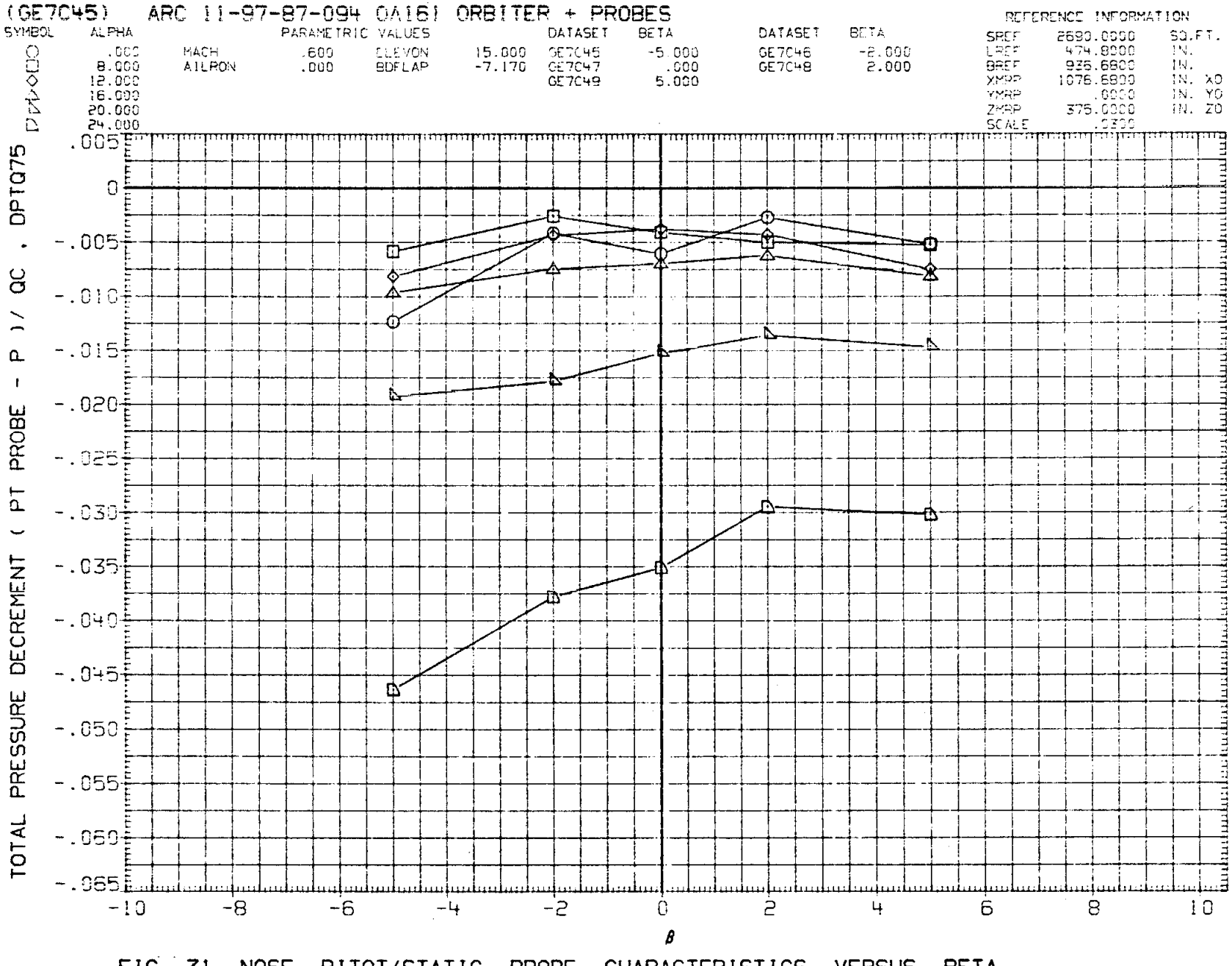


FIG. 31 NOSE PITOT/STATIC PROBE CHARACTERISTICS VERSUS BETA AT VARIOUS ALPHAS

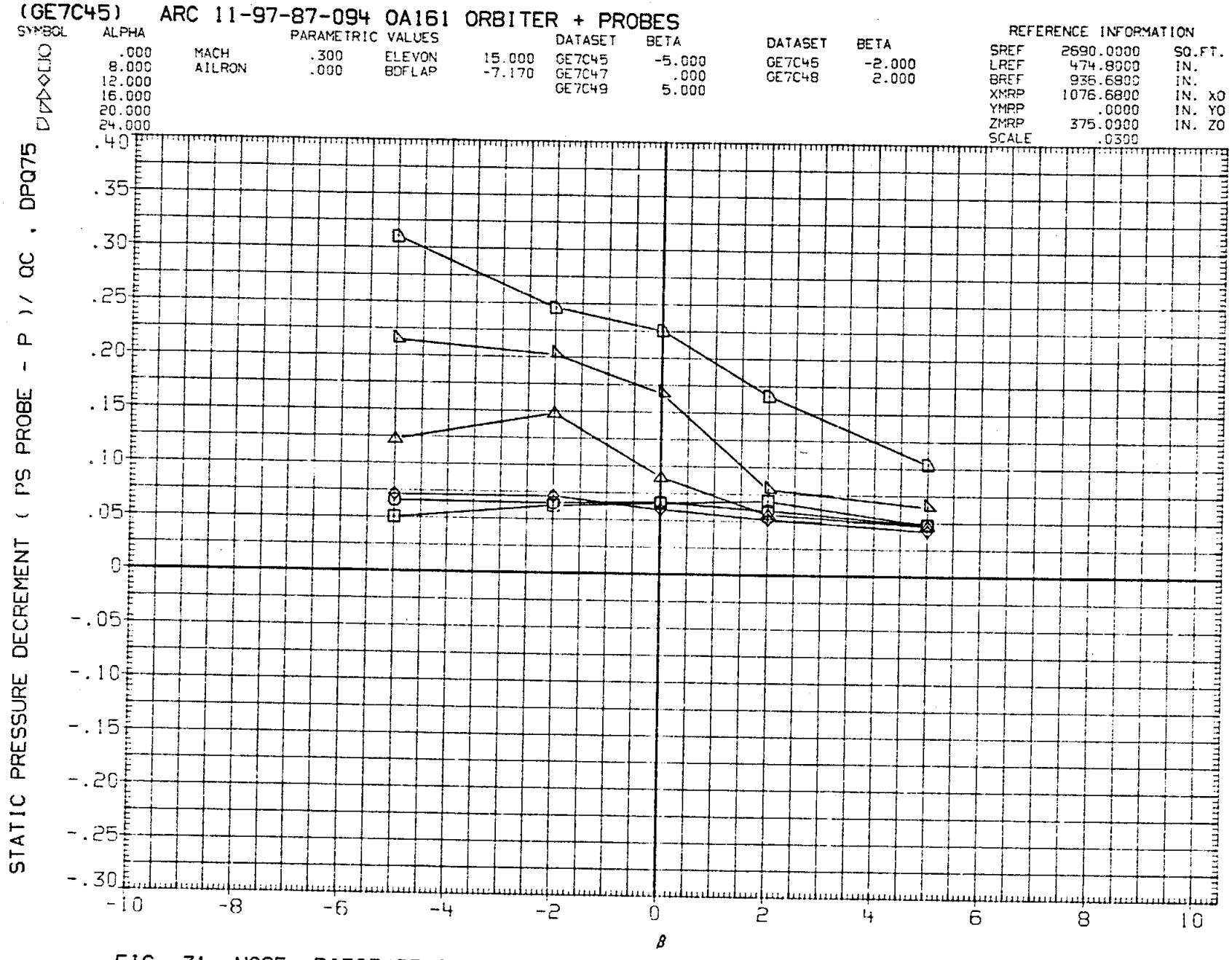


FIG. 31 NOSE PITOT/STATIC PROBE CHARACTERISTICS VERSUS BETA AT VARIOUS ALPHAS

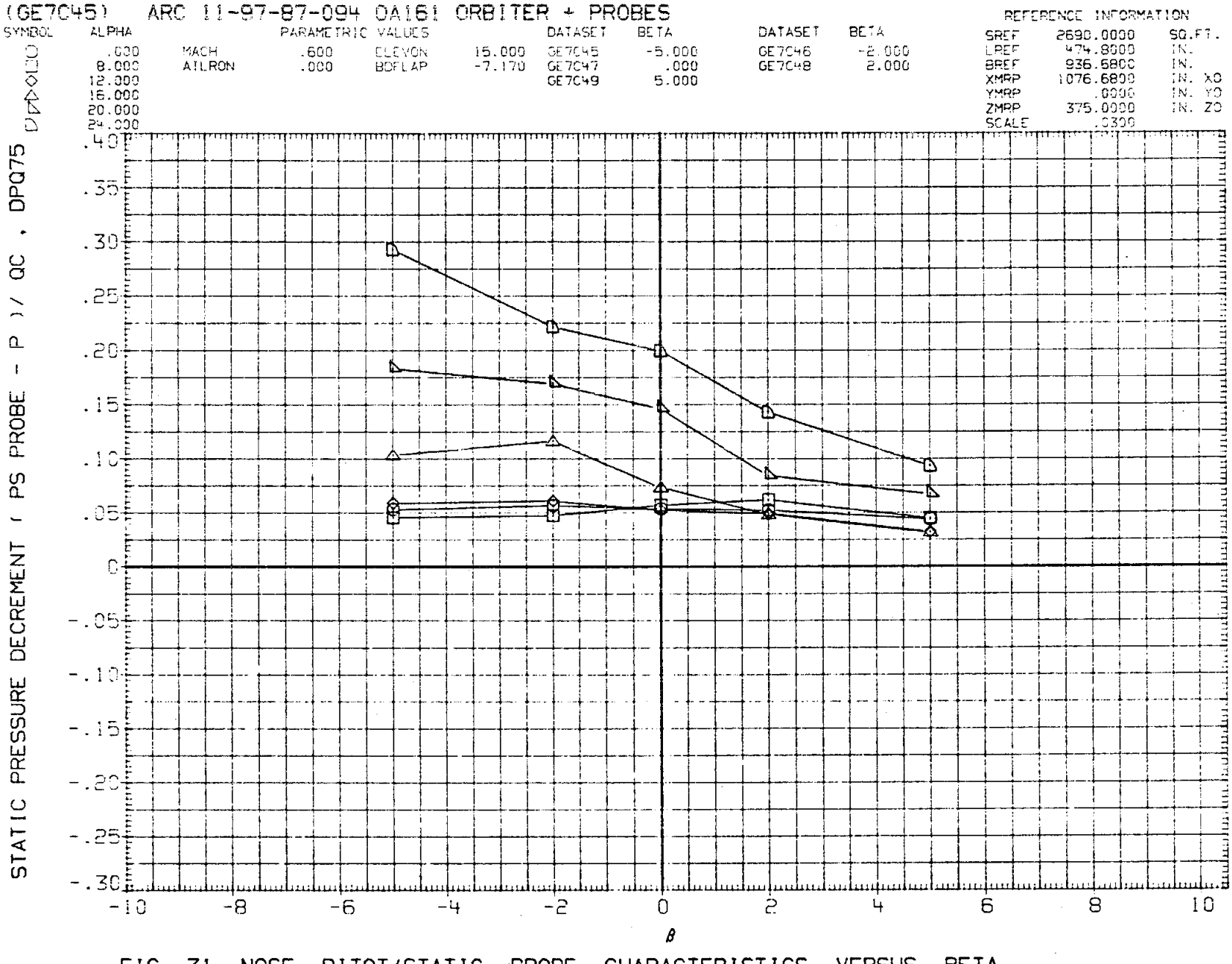


FIG. 31 NOSE PITOT/STATIC PROBE CHARACTERISTICS VERSUS BETA AT VARIOUS ALPHAS

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
GE7X45	○	ARC 11-97-87-094 OA161 ORBITER + PROBES	-5.000	15.000	.000	-7.170
GE7X46	□	ARC 11-97-87-094 OA161 ORBITER + PROBES	-2.000	15.000	.000	-7.170
GE7X47	◇	ARC 11-97-87-094 OA161 ORBITER + PROBES	.000	15.000	.000	-7.170
GE7X48	△	ARC 11-97-87-094 OA161 ORBITER + PROBES	2.000	15.000	.000	-7.170
GE7X49	▽	ARC 11-97-87-094 OA161 ORBITER + PROBES	5.000	15.000	.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	935.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

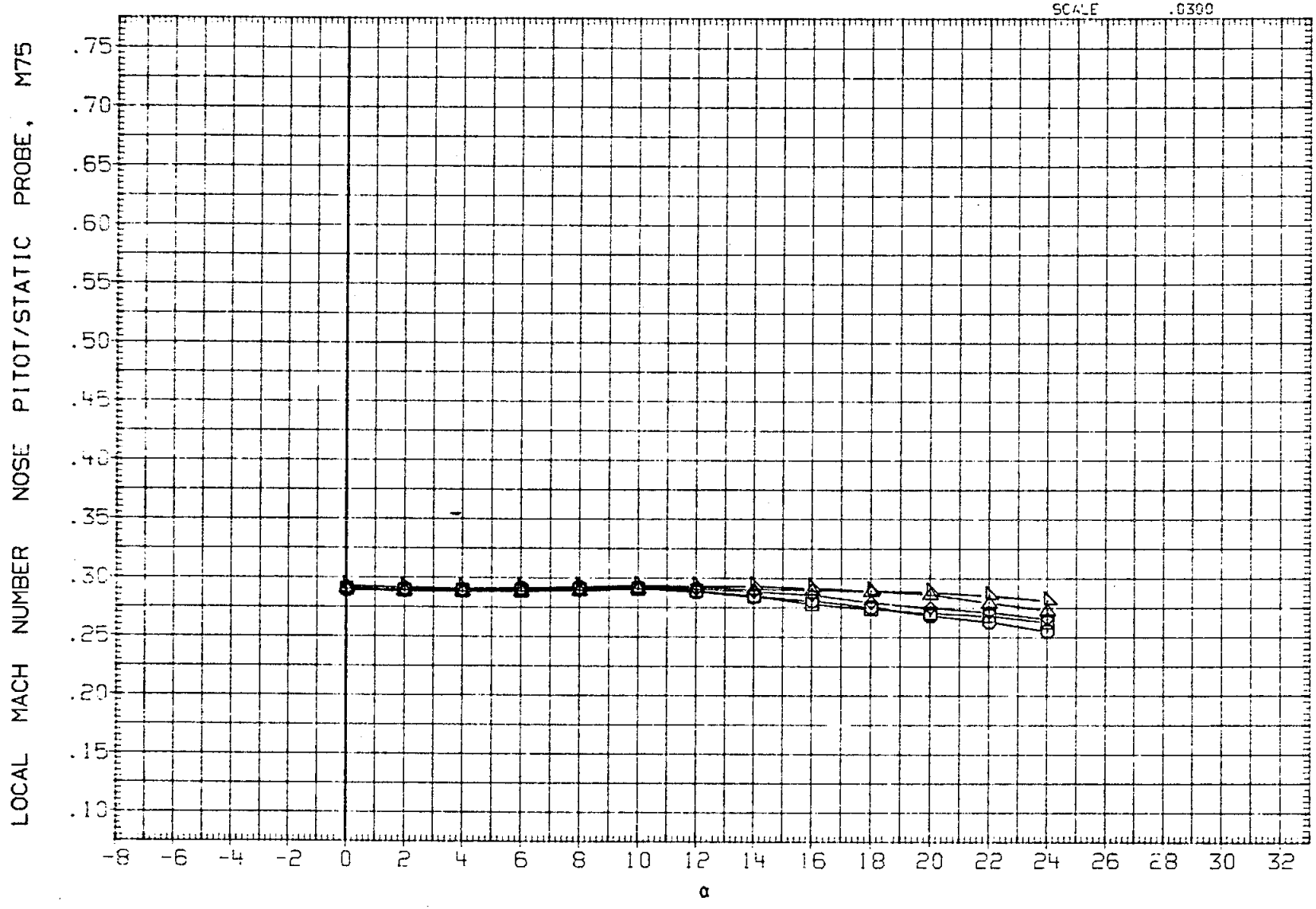


FIG. 32 NOSE PITOT/STATIC PROBE CHARACTERISTICS VERSUS ALPHA AT VARIOUS BETAS

(A) MACH = .30

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
GE7X45	○	ARC 11-97-87-094 OA161 ORBITER + PROBES	-5.000	15.000	.000	-7.170
GE7X46	□	ARC 11-97-87-094 OA161 ORBITER + PROBES	-2.000	15.000	.000	-7.170
GE7X47	◇	ARC 11-97-87-094 OA161 ORBITER + PROBES	.000	15.000	.000	-7.170
GE7X48	△	ARC 11-97-87-094 OA161 ORBITER + PROBES	2.000	15.000	.000	-7.170
GE7X49	▽	ARC 11-97-87-094 OA161 ORBITER + PROBES	5.000	15.000	.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0300	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

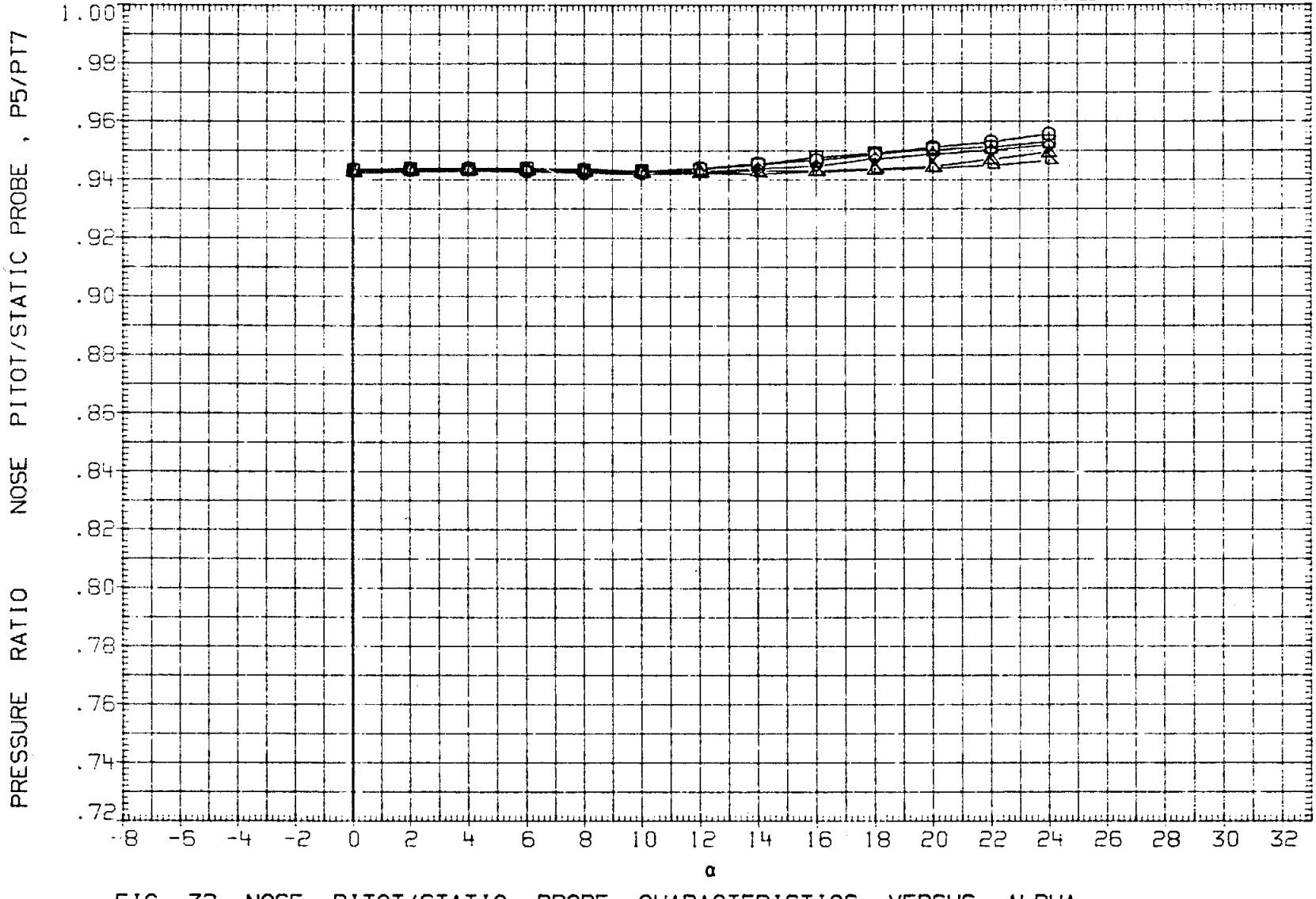


FIG. 32 NOSE PITOT/STATIC PROBE CHARACTERISTICS VERSUS ALPHA AT VARIOUS BETAS

(A)MACH = .30

DATA SET	SYMBOL	CONFIGURATION
GE7X45	○	ARC 11-97-87-094 OA161 ORBITER + PROBES
GE7X46	□	ARC 11-97-87-094 OA161 ORBITER + PROBES
GE7X47	◇	ARC 11-97-87-094 OA161 ORBITER + PROBES
GE7X48	△	ARC 11-97-87-094 OA161 ORBITER + PROBES
GE7X49	▷	ARC 11-97-87-094 OA161 ORBITER + PROBES

BETA	ELEVON	AILRON	BDFLAP
-5.000	15.000	.000	-7.170
-2.000	15.000	.000	-7.170
.000	15.000	.000	-7.170
2.000	15.000	.000	-7.170
5.000	15.000	.000	-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

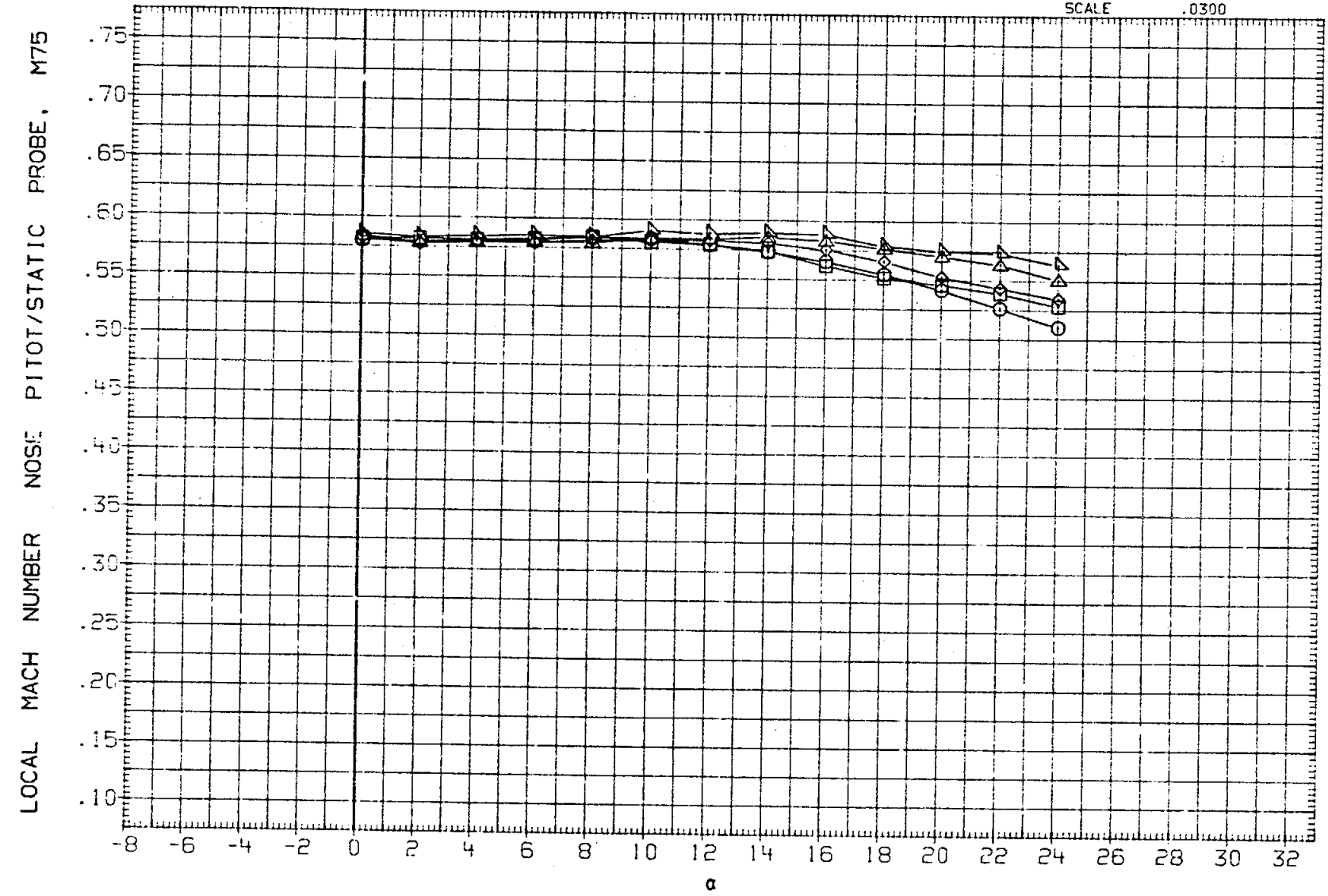


FIG. 32 NOSE PITOT/STATIC PROBE CHARACTERISTICS VERSUS ALPHA AT VARIOUS BETAS

(B) MACH = .60

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
GE7X45	○	ARC 11-97-87-094 OA161 ORBITER + PROBES	-5.000	15.000	.000	-7.170
GE7X46	□	ARC 11-97-87-094 OA161 ORBITER + PROBES	-2.000	15.000	.000	-7.170
GE7X47	◇	ARC 11-97-87-094 OA161 ORBITER + PROBES	.000	15.000	.000	-7.170
GE7X48	△	ARC 11-97-87-094 OA161 ORBITER + PROBES	2.000	15.000	.000	-7.170
GE7X49	▷	ARC 11-97-87-094 OA161 ORBITER + PROBES	5.000	15.000	.000	-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	935.0800	IN.
XMRP	1076.6600	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

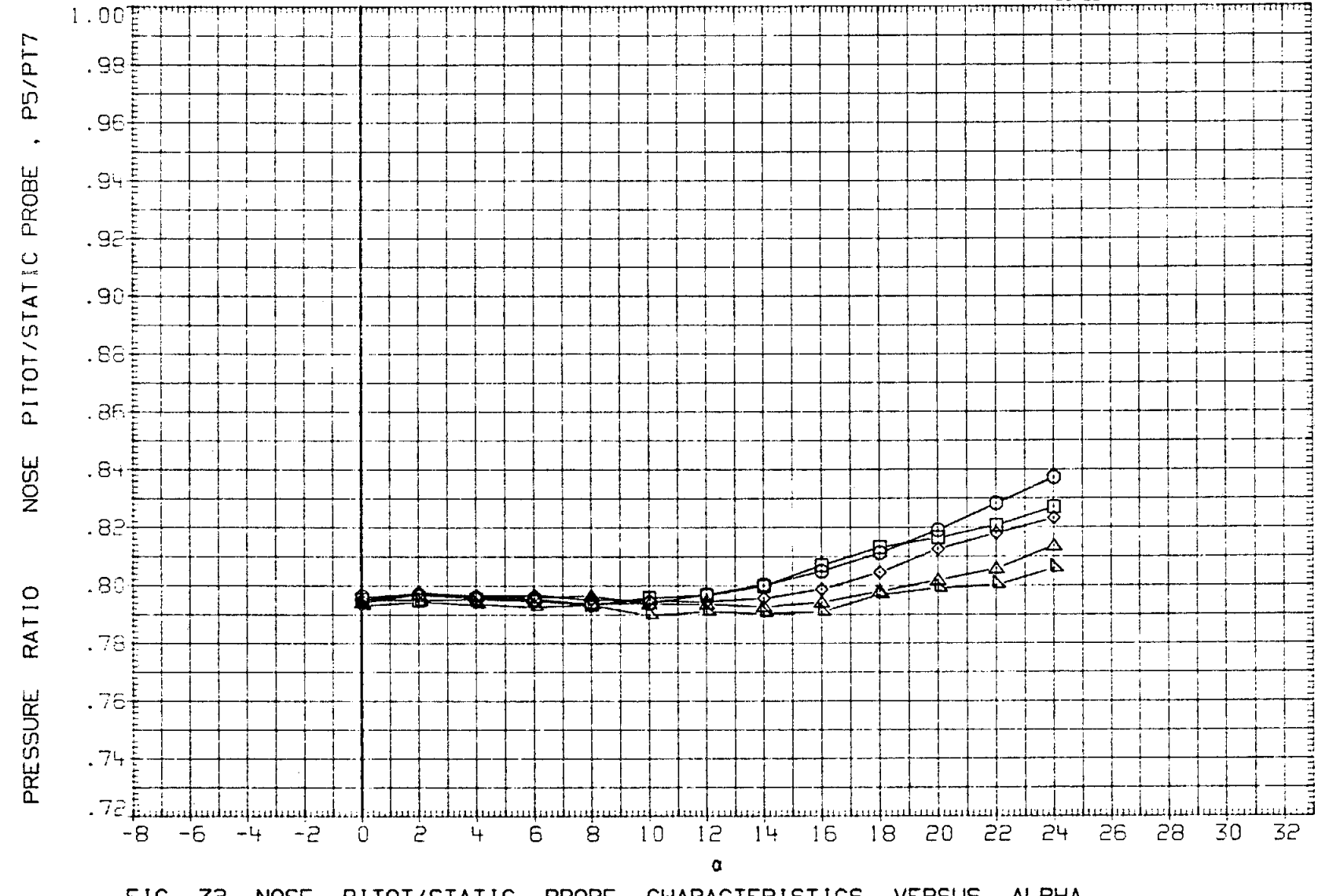


FIG. 32 NOSE PITOT/STATIC PROBE CHARACTERISTICS VERSUS ALPHA AT VARIOUS BETAS

(B)MACH = .60

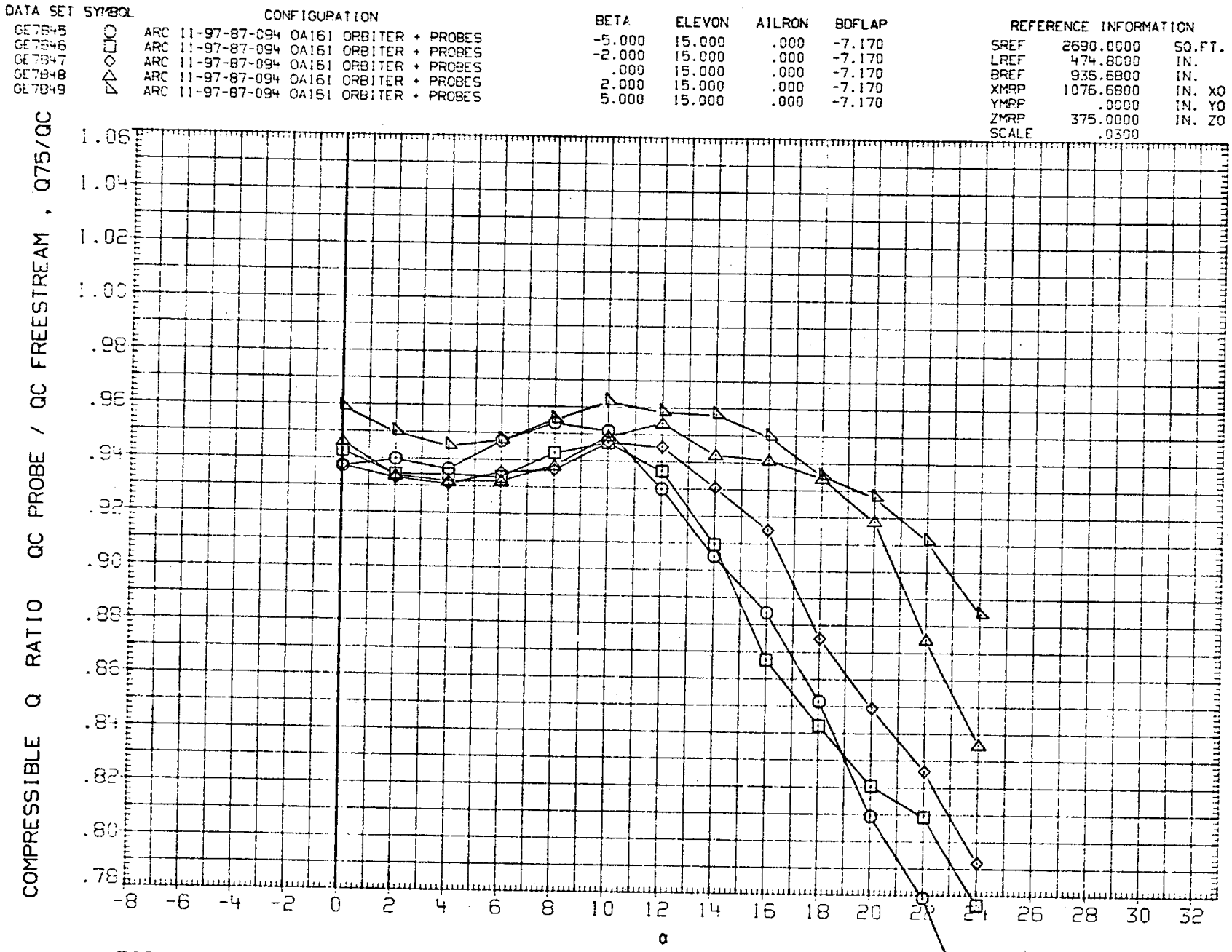


FIG. 32 NOSE PITOT/STATIC PROBE CHARACTERISTICS VERSUS ALPHA AT VARIOUS BETAS

(A) MACH = .30

DATA SET	SYMBOL	CONFIGURATION
GE7845	○	ARC 11-97-87-094 OA161 ORBITER + PROBES
GE7846	□	ARC 11-97-87-094 OA161 ORBITER + PROBES
GE7847	◇	ARC 11-97-87-094 OA161 ORBITER + PROBES
GE7848	△	ARC 11-97-87-094 OA161 ORBITER + PROBES
GE7849	◁	ARC 11-97-87-094 OA161 ORBITER + PROBES

BETA	ELEVON	AILRON	BDFLAP
-5.000	15.000	.000	-7.170
-2.000	15.000	.000	-7.170
.000	15.000	.000	-7.170
2.000	15.000	.000	-7.170
5.000	15.000	.000	-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

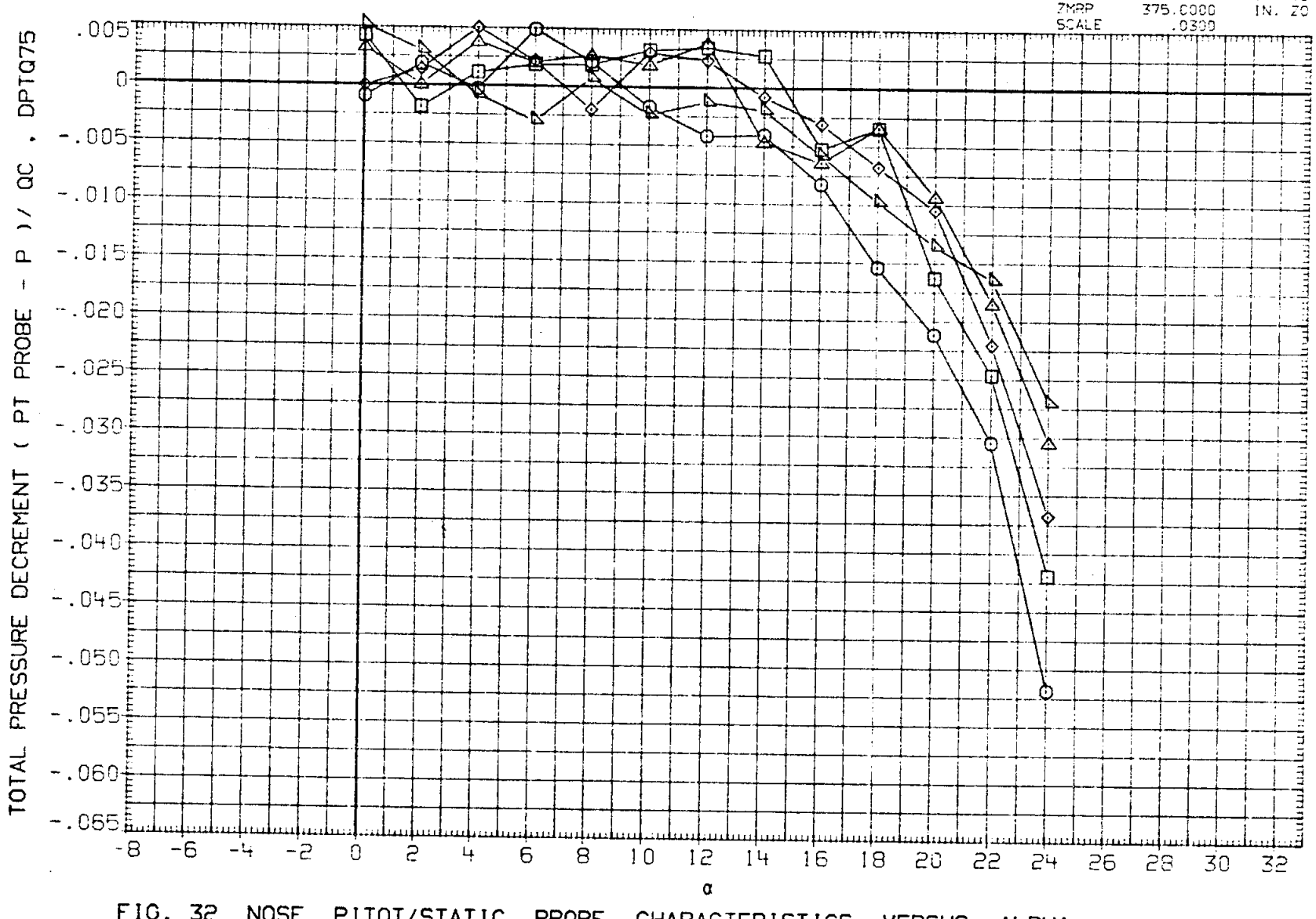


FIG. 32 NOSE PITOT/STATIC PROBE CHARACTERISTICS VERSUS ALPHA AT VARIOUS BETAS

(A)MACH = .30

DATA SET	SYMBOL	CONFIGURATION
GE7B45	○	ARC 11-97-87-094 OA161 ORBITER + PROBES
GE7B46	□	ARC 11-97-87-094 OA161 ORBITER + PROBES
GE7B47	◇	ARC 11-97-87-094 OA161 ORBITER + PROBES
GE7B48	△	ARC 11-97-87-094 OA161 ORBITER + PROBES
GE7B49	▽	ARC 11-97-87-094 OA161 ORBITER + PROBES

BETA	ELEVON	AILRON	BDFLAP
-5.000	15.000	.000	-7.170
-2.000	15.000	.000	-7.170
.000	15.000	.000	-7.170
2.000	15.000	.000	-7.170
5.000	15.000	.000	-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

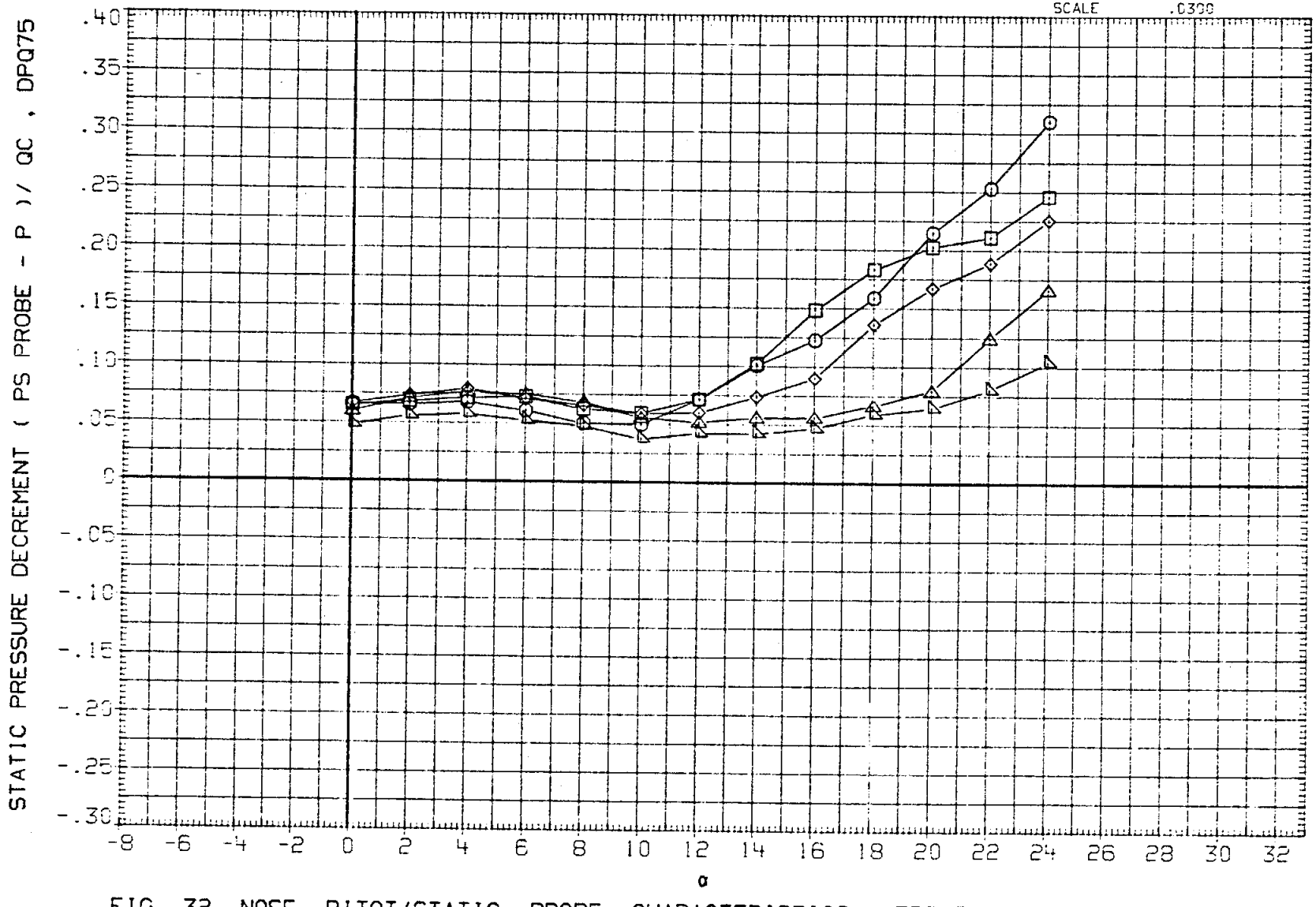


FIG. 32 NOSE PITOT/STATIC PROBE CHARACTERISTICS VERSUS ALPHA AT VARIOUS BETAS

(A) MACH = .30

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
GE7B45	○	ARC 11-97-87-094 OA161 ORBITER + PROBES	-5.000	15.000	.000	-7.170
GE7B46	□	ARC 11-97-87-094 OA161 ORBITER + PROBES	-2.000	15.000	.000	-7.170
GE7B47	◇	ARC 11-97-87-094 OA161 ORBITER + PROBES	.000	15.000	.000	-7.170
GE7B48	△	ARC 11-97-87-094 OA161 ORBITER + PROBES	2.000	15.000	.000	-7.170
GE7B49	▷	ARC 11-97-87-094 OA161 ORBITER + PROBES	5.000	15.000	.000	-7.170

REFERENCE INFORMATION		
SREF	2590.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	0390	

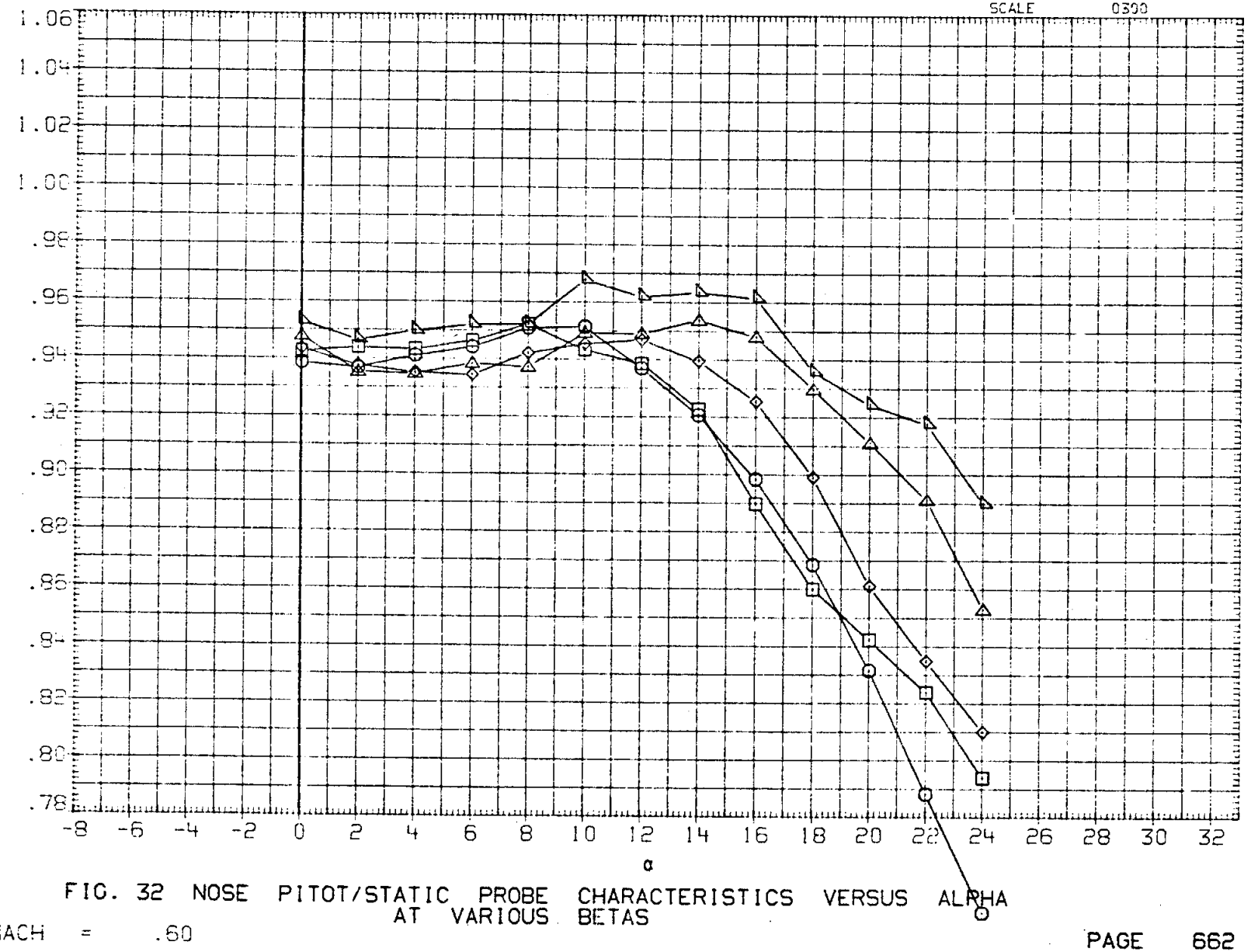


FIG. 32 NOSE PITOT/STATIC PROBE CHARACTERISTICS VERSUS ALPHA AT VARIOUS BETAS

(B)MACH = .60

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
GE7B45	○	ARC 11-97-87-094 OA161 ORBITER + PROBES	-5.000	15.000	.000	-7.170
GE7B46	□	ARC 11-97-87-094 OA161 ORBITER + PROBES	-2.000	15.000	.000	-7.170
GE7B47	◇	ARC 11-97-87-094 OA161 ORBITER + PROBES	.000	15.000	.000	-7.170
GE7B48	△	ARC 11-97-87-094 OA161 ORBITER + PROBES	2.000	15.000	.000	-7.170
GE7B49	▽	ARC 11-97-87-094 OA161 ORBITER + PROBES	5.000	15.000	.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

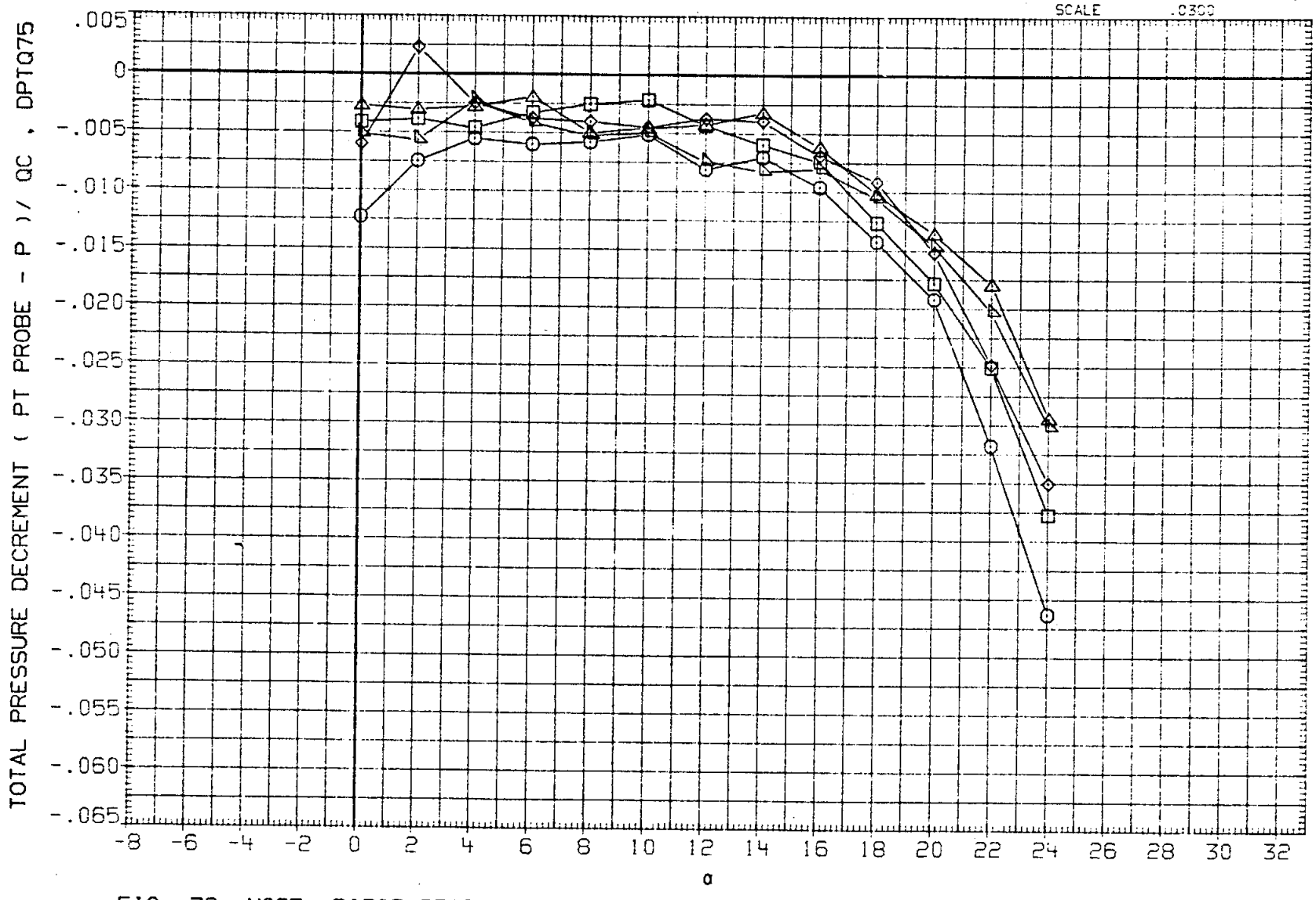


FIG. 32 NOSE PITOT/STATIC PROBE CHARACTERISTICS VERSUS ALPHA AT VARIOUS BETAS

(B) MACH = .60

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
GE7B45	○	ARC 11-97-87-094 OA161 ORBITER + PROBES	-5.000	15.000	.000	-7.170
GE7B46	□	ARC 11-97-87-094 OA161 ORBITER + PROBES	-2.000	15.000	.000	-7.170
GE7B47	◇	ARC 11-97-87-094 OA161 ORBITER + PROBES	.000	15.000	.000	-7.170
GE7B48	△	ARC 11-97-87-094 OA161 ORBITER + PROBES	2.000	15.000	.000	-7.170
GE7B49	▽	ARC 11-97-87-094 OA161 ORBITER + PROBES	5.000	15.000	.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

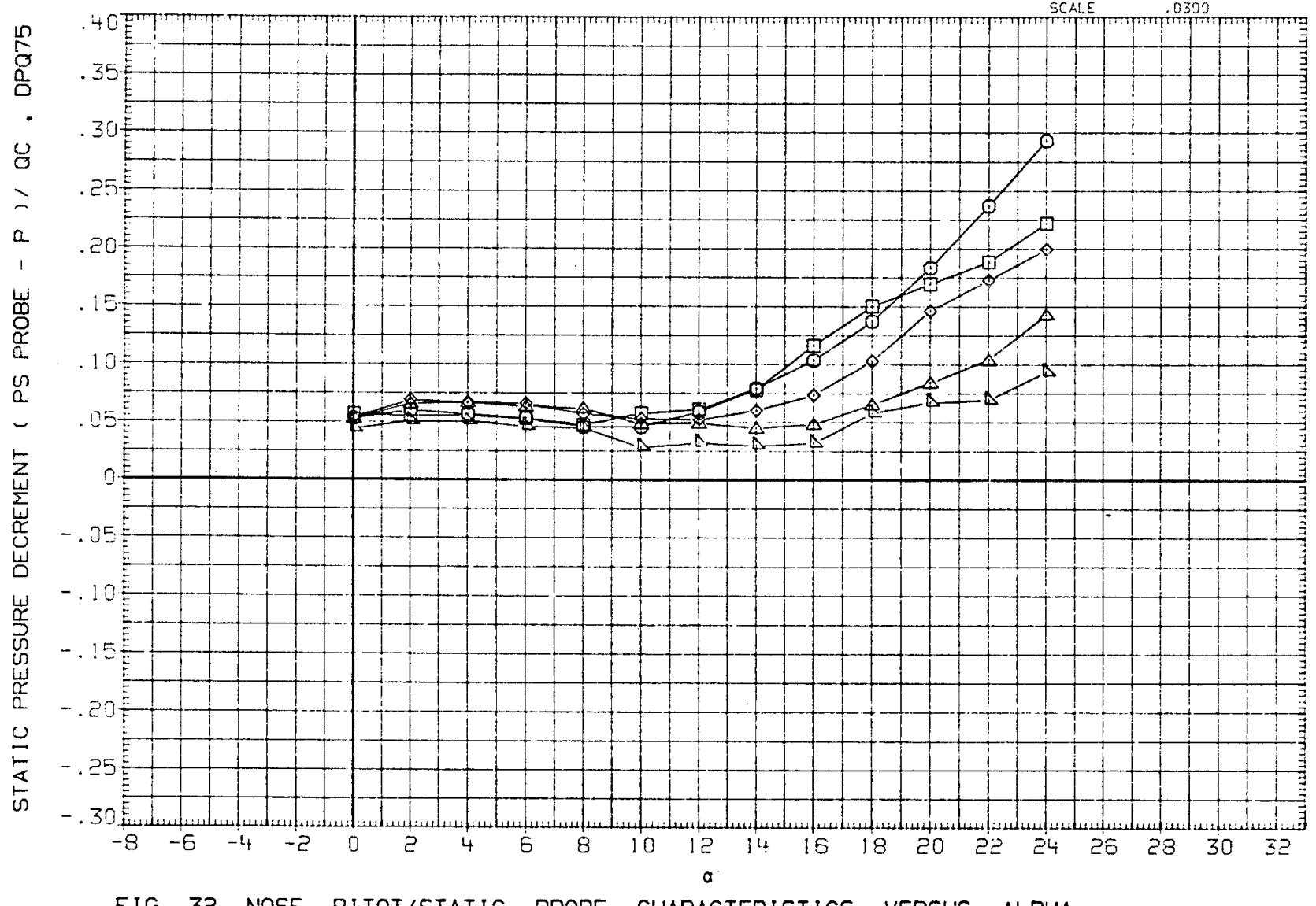


FIG. 32 NOSE PITOT/STATIC PROBE CHARACTERISTICS VERSUS ALPHA AT VARIOUS BETAS

(B)MACH = .60

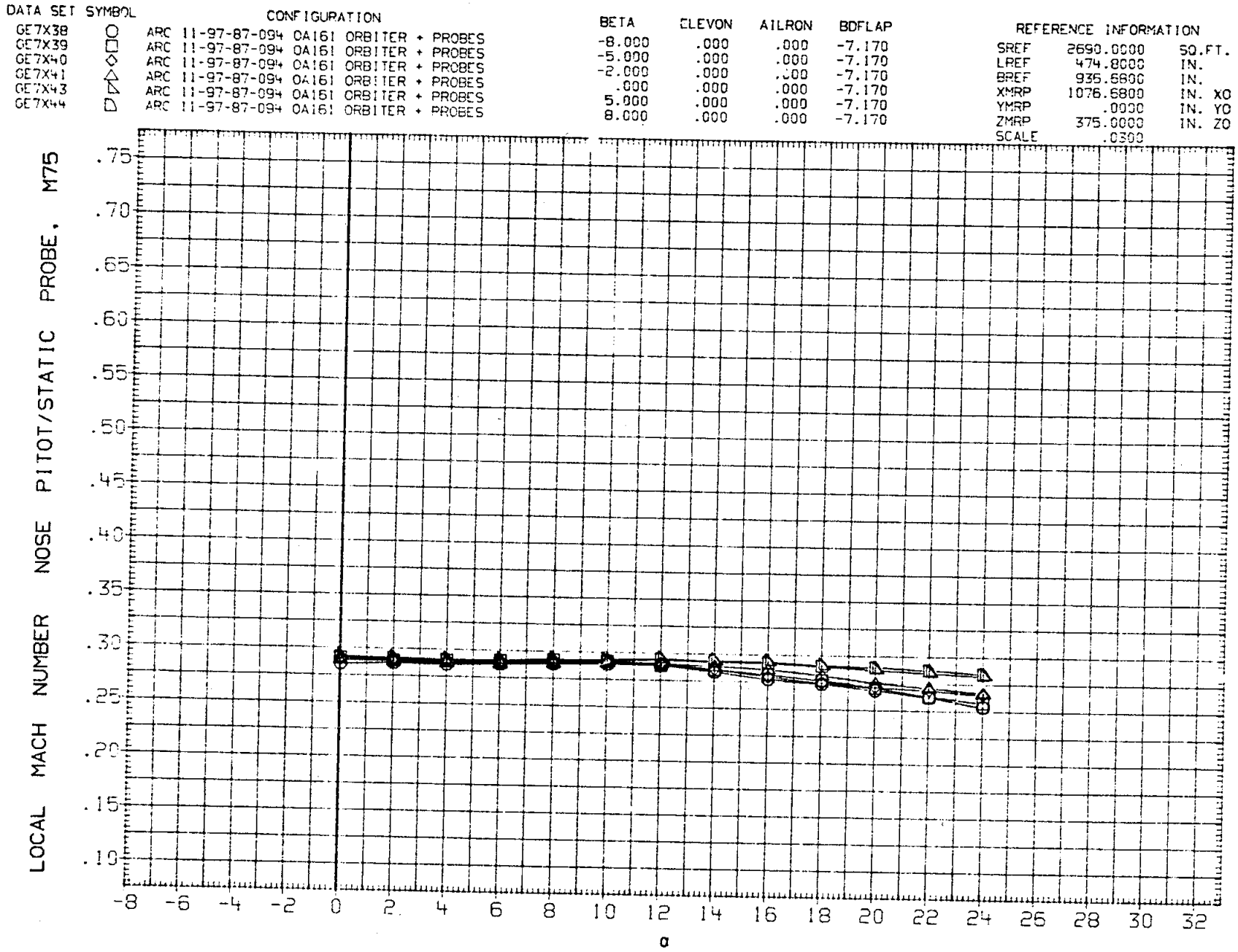


FIG. 32 NOSE PITOT/STATIC PROBE CHARACTERISTICS VERSUS ALPHA AT VARIOUS BETAS

(A) MACH = .30

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
GE7X38	○	ARC 11-97-87-094 OA161 ORBITER + PROBES	-8.000	.000	.000	-7.170
GE7X39	□	ARC 11-97-87-094 OA161 ORBITER + PROBES	-5.000	.000	.000	-7.170
GE7X40	◇	ARC 11-97-87-094 OA161 ORBITER + PROBES	-2.000	.000	.000	-7.170
GE7X41	△	ARC 11-97-87-094 OA161 ORBITER + PROBES	.000	.000	.000	-7.170
GE7X43	▽	ARC 11-97-87-094 OA161 ORBITER + PROBES	5.000	.000	.000	-7.170
GE7X44	⬠	ARC 11-97-87-094 OA161 ORBITER + PROBES	8.000	.000	.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0500	

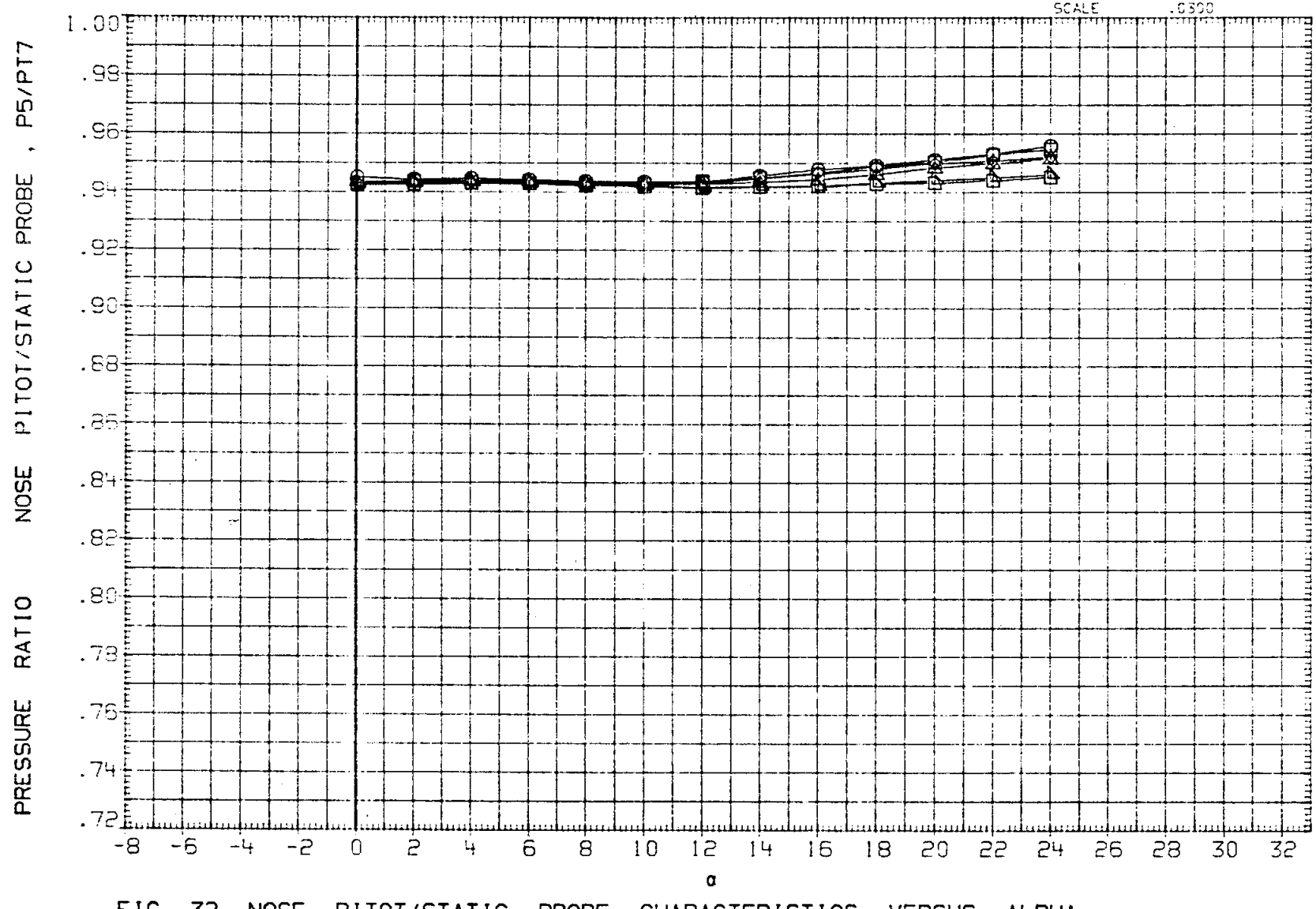


FIG. 32 NOSE PITOT/STATIC PROBE CHARACTERISTICS VERSUS ALPHA AT VARIOUS BETAS

(A)MACH = .30

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
GE7X38	○	ARC 11-97-87-094 OA161 ORBITER + PROBES	-8.000	.000	.000	-7.170
GE7X39	□	ARC 11-97-87-094 OA161 ORBITER + PROBES	-5.000	.000	.000	-7.170
GE7X40	◇	ARC 11-97-87-094 OA161 ORBITER + PROBES	-2.000	.000	.000	-7.170
GE7X41	△	ARC 11-97-87-094 OA161 ORBITER + PROBES	.000	.000	.000	-7.170
GE7X43	▽	ARC 11-97-87-094 OA161 ORBITER + PROBES	5.000	.000	.000	-7.170
GE7X44	▷	ARC 11-97-87-094 OA161 ORBITER + PROBES	8.000	.000	.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

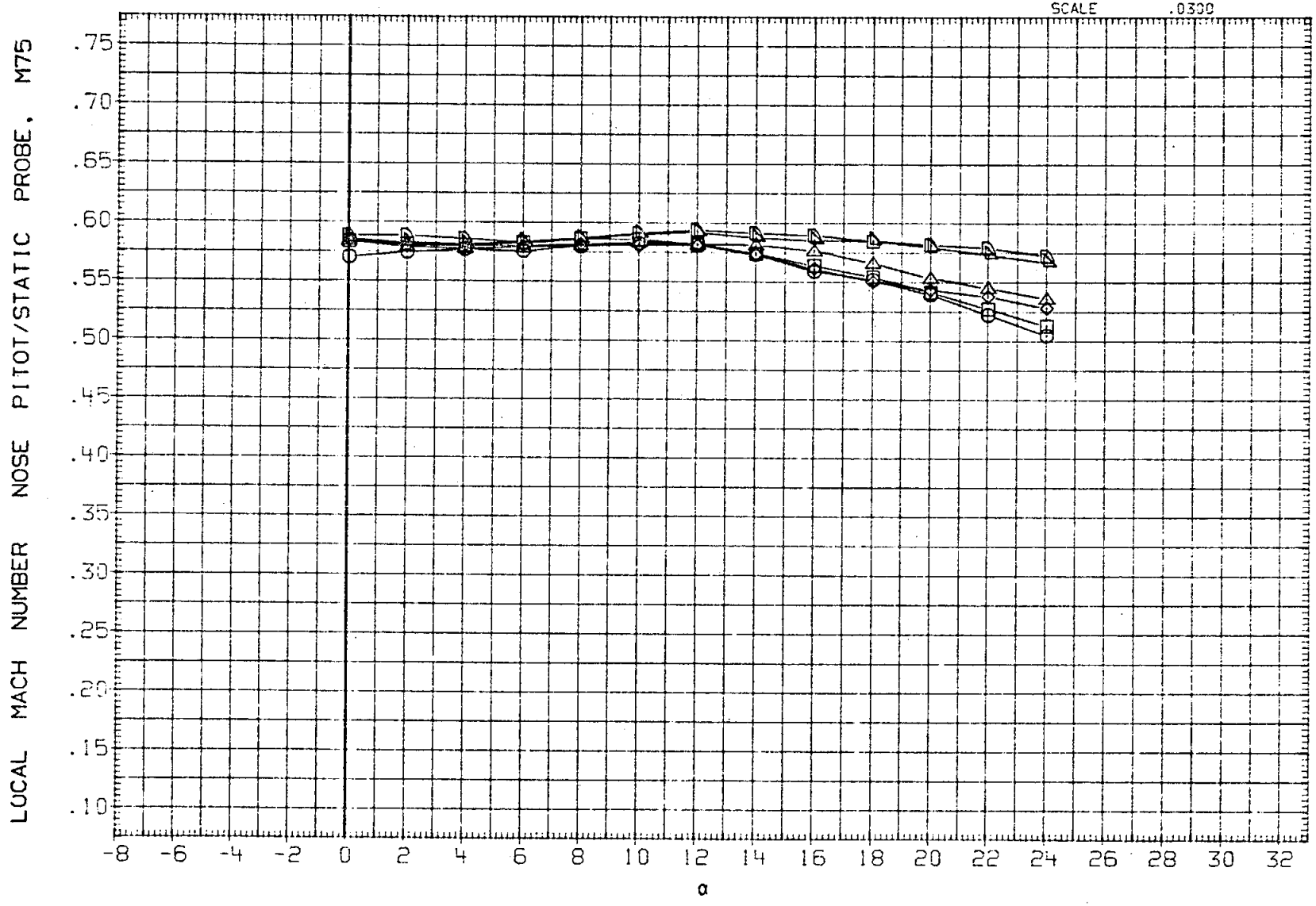


FIG. 32 NOSE PITOT/STATIC PROBE CHARACTERISTICS VERSUS ALPHA AT VARIOUS BETAS

(B)MACH = .60

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
GE7X38	○	ARC 11-97-87-094 OA161 ORBITER + PROBES	-8.000	.000	.000	-7.170
GE7X39	□	ARC 11-97-87-094 OA161 ORBITER + PROBES	-5.000	.000	.000	-7.170
GE7X40	◇	ARC 11-97-87-094 OA161 ORBITER + PROBES	-2.000	.000	.000	-7.170
GE7X41	△	ARC 11-97-87-094 OA161 ORBITER + PROBES	.000	.000	.000	-7.170
GE7X43	▷	ARC 11-97-87-094 OA161 ORBITER + PROBES	5.000	.000	.000	-7.170
GE7X44	D	ARC 11-97-87-094 OA161 ORBITER + PROBES	8.000	.000	.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	956.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

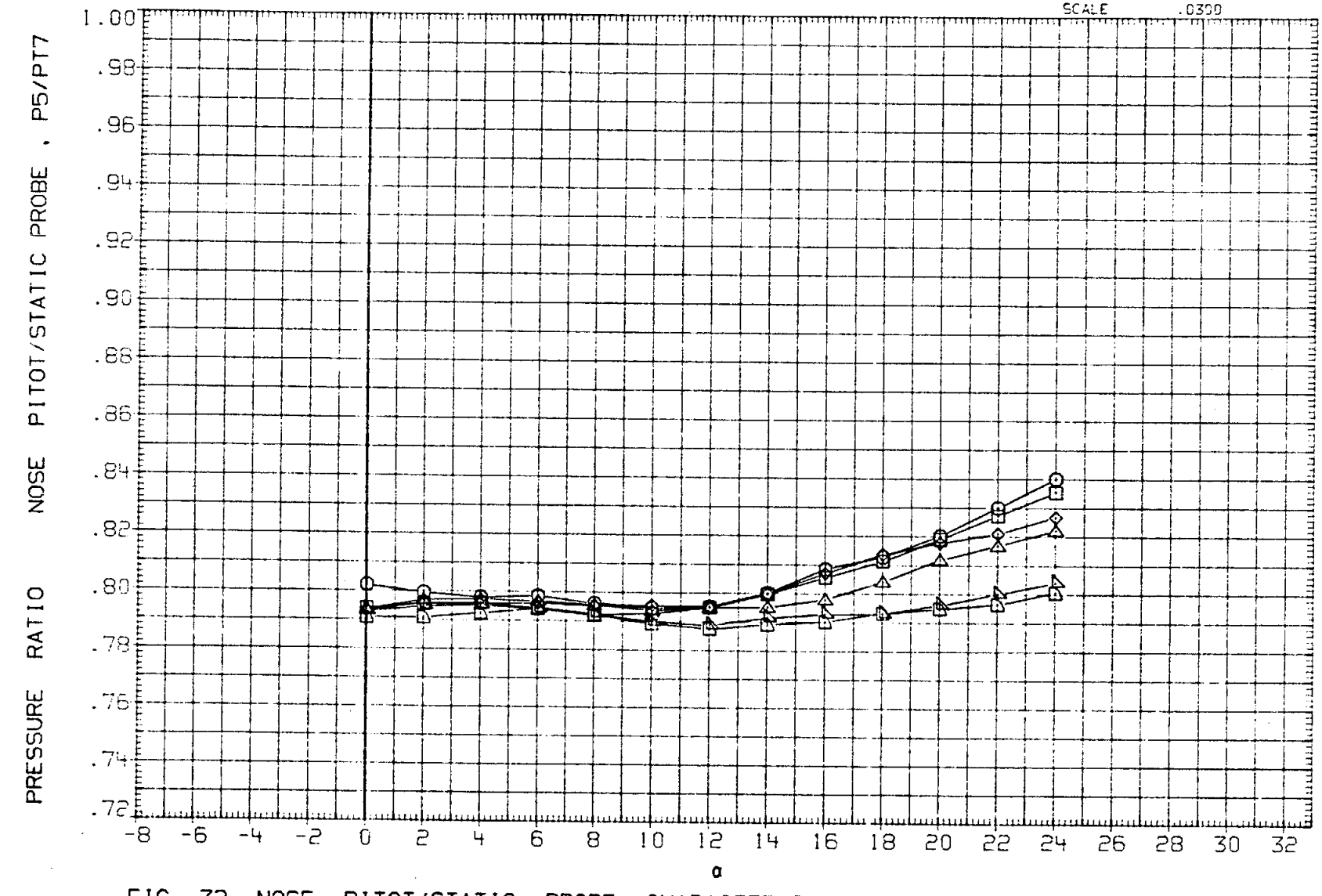


FIG. 32 NOSE PITOT/STATIC PROBE CHARACTERISTICS VERSUS ALPHA AT VARIOUS BETAS

(B)MACH = .60

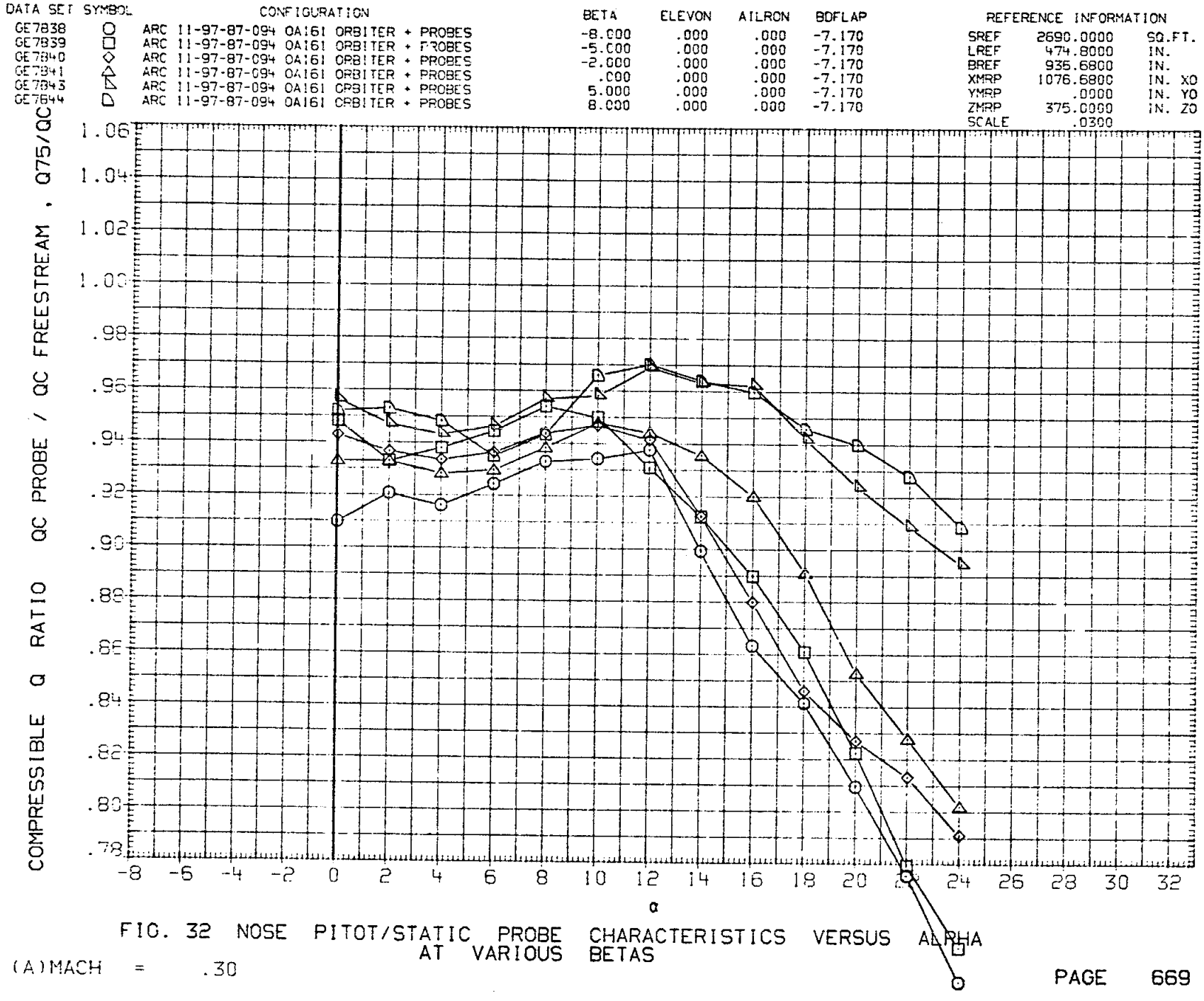


FIG. 32 NOSE PITOT/STATIC PROBE CHARACTERISTICS VERSUS ALPHA AT VARIOUS BETAS

(A)MACH = .30

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	RUDDER
GE7B38	○	ARC 11-97-87-094 0A161 ORBITER + PROBES	-8.000	.000	.000	-7.170
GE7B39	□	ARC 11-97-87-094 0A161 ORBITER + PROBES	-5.000	.000	.000	-7.170
GE7B40	◇	ARC 11-97-87-094 0A161 ORBITER + PROBES	-2.000	.000	.000	-7.170
GE7B41	△	ARC 11-97-87-094 0A161 ORBITER + PROBES	.000	.000	.000	-7.170
GE7B43	▽	ARC 11-97-87-094 0A161 ORBITER + PROBES	5.000	.000	.000	-7.170
GE7B44	⬠	ARC 11-97-87-094 0A161 ORBITER + PROBES	8.000	.000	.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	935.6700	IN.
XMRP	1076.6800	IN. XO
YMRP	0.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	1.0000	

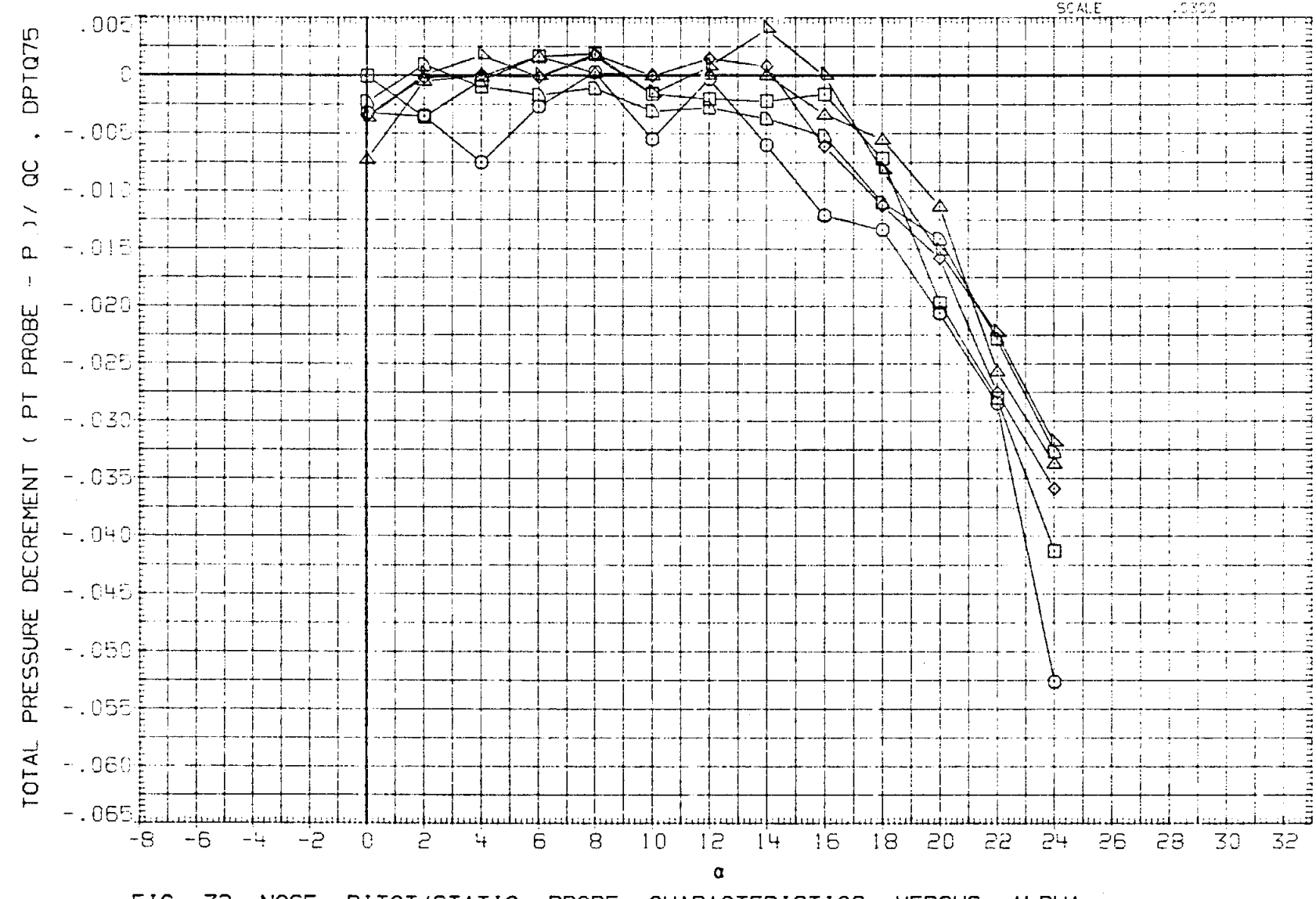


FIG. 32 NOSE PITOT/STATIC PROBE CHARACTERISTICS VERSUS ALPHA AT VARIOUS BETAS

(A) MACH = .30

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
GE7838	○	ARC 11-97-87-094 OA161 ORBITER + PROBES	-8.000	.000	.000	-7.170
GE7839	□	ARC 11-97-87-094 OA161 ORBITER + PROBES	-5.000	.000	.000	-7.170
GE7840	◇	ARC 11-97-87-094 OA161 ORBITER + PROBES	-2.000	.000	.000	-7.170
GE7841	△	ARC 11-97-87-094 OA161 ORBITER + PROBES	.000	.000	.000	-7.170
GE7843	▽	ARC 11-97-87-094 OA161 ORBITER + PROBES	5.000	.000	.000	-7.170
GE7844	▷	ARC 11-97-87-094 OA161 ORBITER + PROBES	8.000	.000	.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

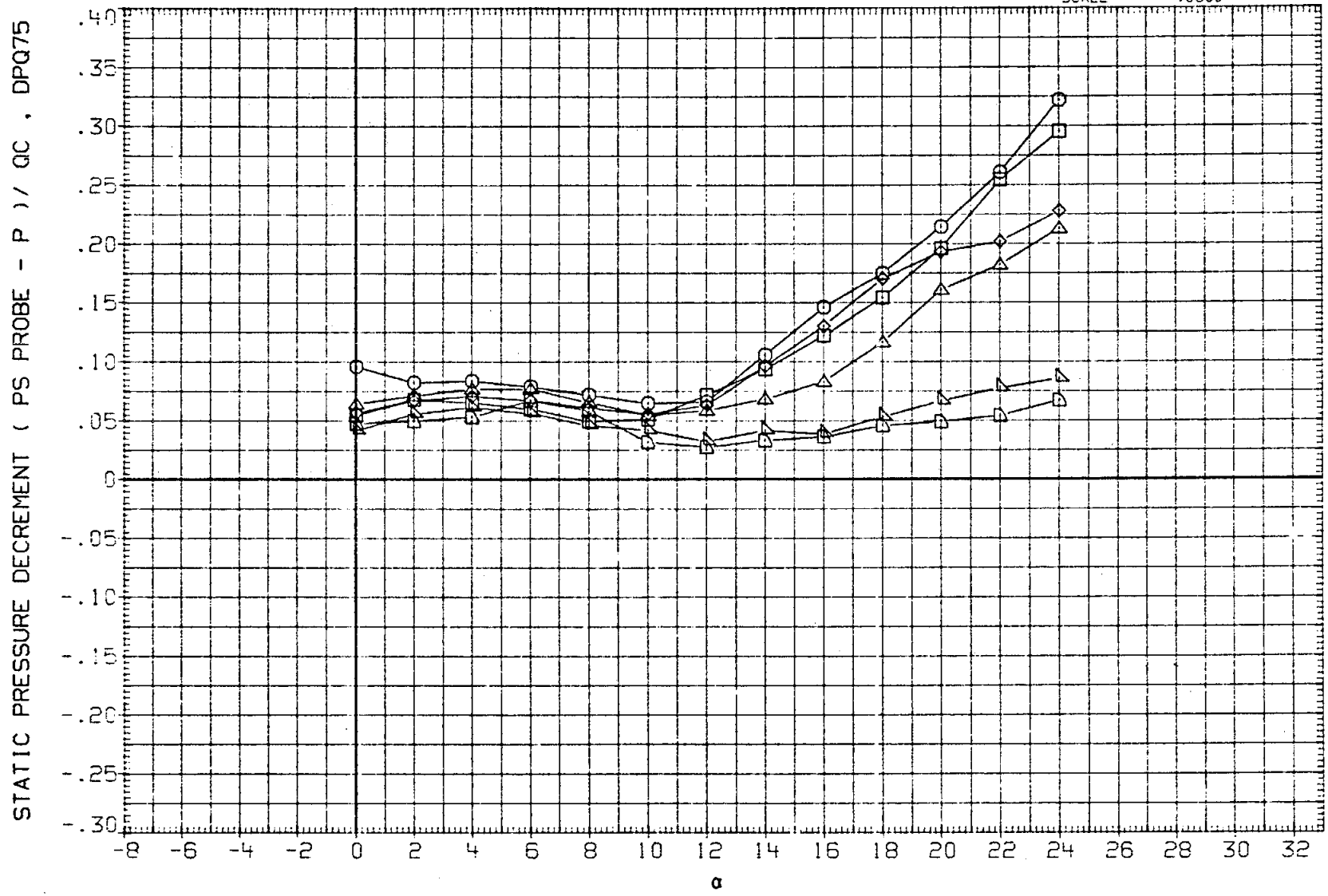


FIG. 32 NOSE PITOT/STATIC PROBE CHARACTERISTICS VERSUS ALPHA AT VARIOUS BETAS

(A)MACH = .30

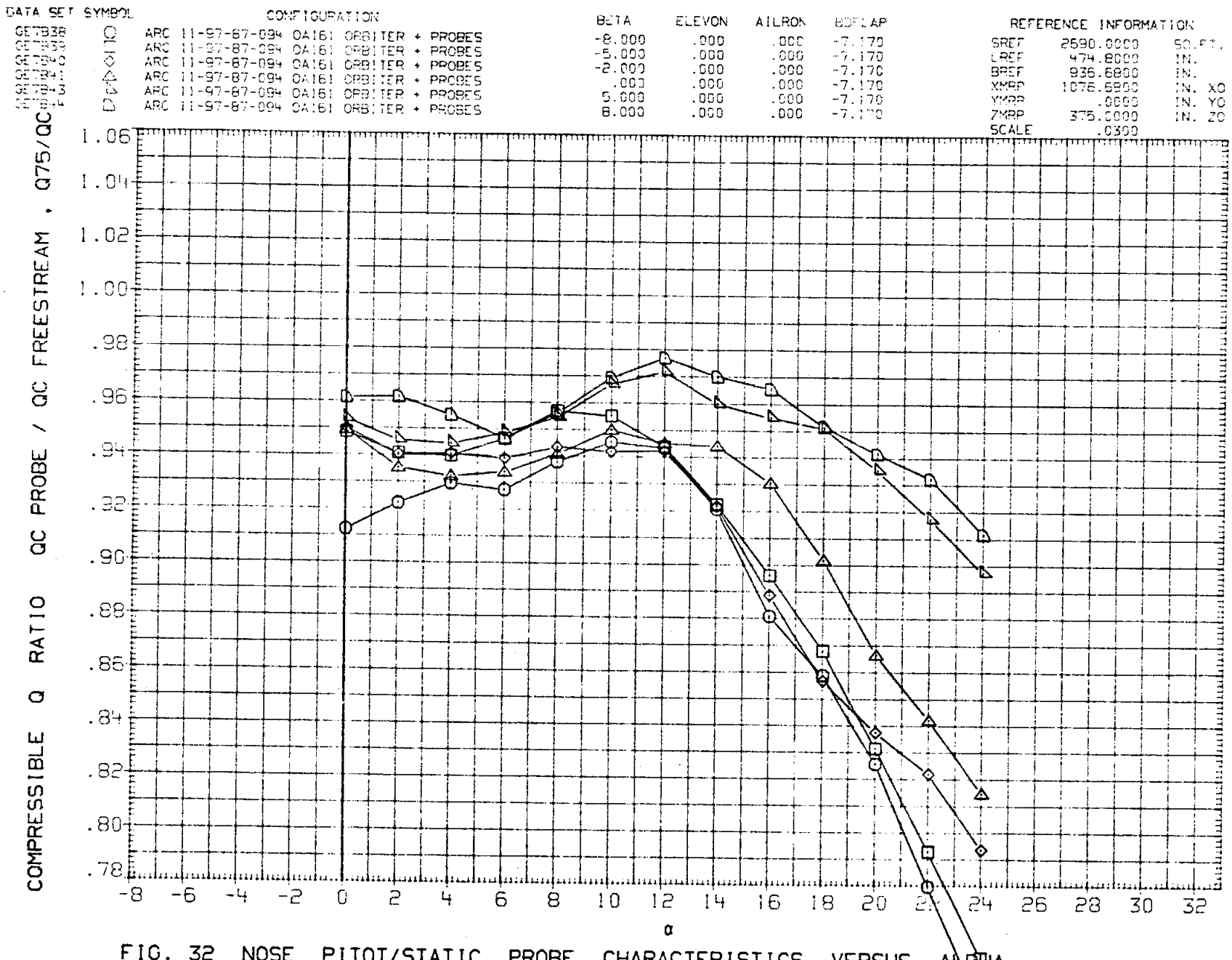


FIG. 32 NOSE PITOT/STATIC PROBE CHARACTERISTICS VERSUS ALPHA AT VARIOUS BETAS

(B)MACH = .60

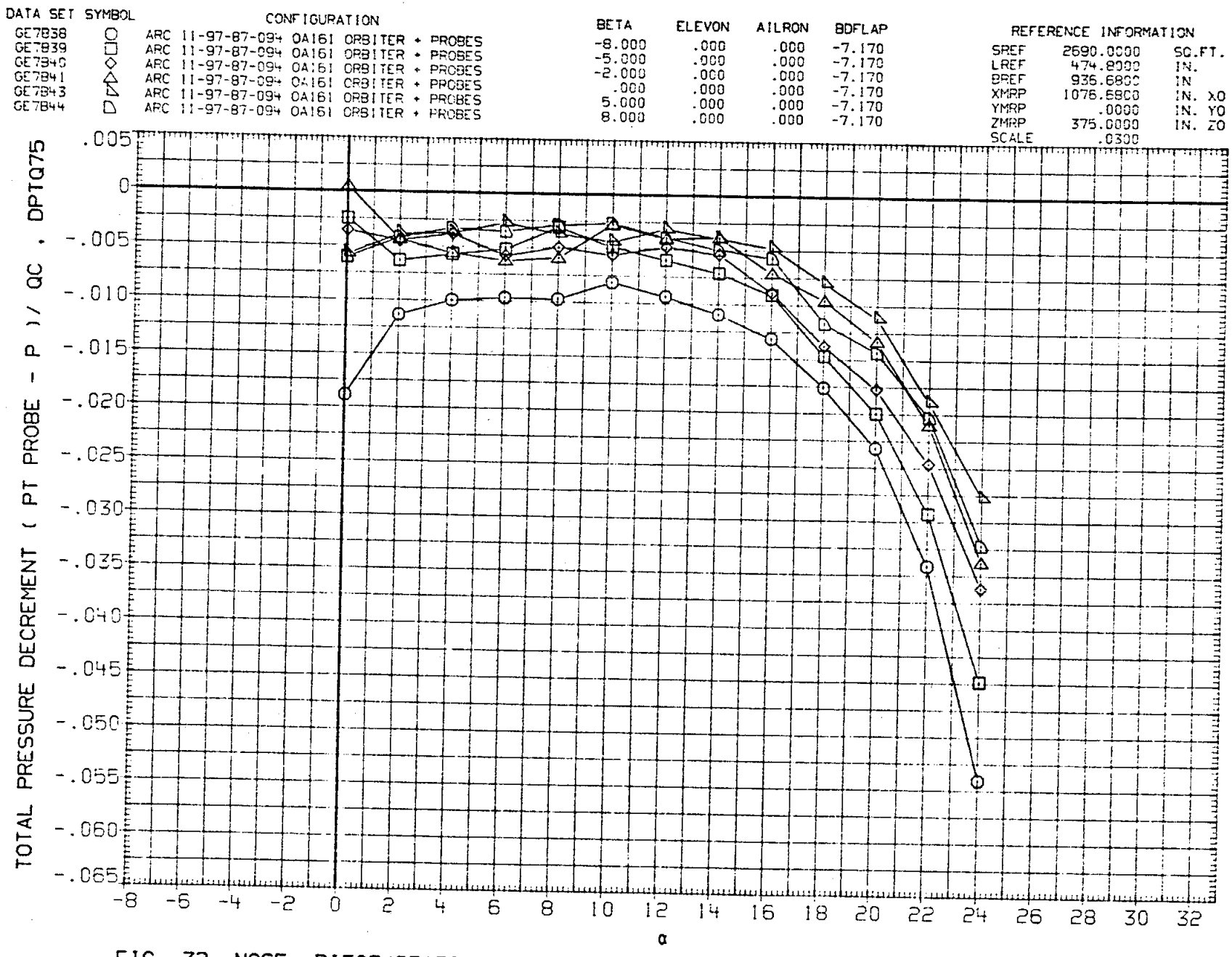


FIG. 32 NOSE PITOT/STATIC PROBE CHARACTERISTICS VERSUS ALPHA AT VARIOUS BETAS

(B)MACH = .60

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	RUDDER
GE7B38	○	ARC 11-97-87-094 OA161 ORBITER + PROBES	-8.000	.000	.000	-7.170
GE7B39	□	ARC 11-97-87-094 OA161 ORBITER + PROBES	-5.000	.000	.000	-7.170
GE7B40	◇	ARC 11-97-87-094 OA161 ORBITER + PROBES	-2.000	.000	.000	-7.170
GE7B41	△	ARC 11-97-87-094 OA161 ORBITER + PROBES	.000	.000	.000	-7.170
GE7B43	▱	ARC 11-97-87-094 OA161 ORBITER + PROBES	5.000	.000	.000	-7.170
GE7B44	⬠	ARC 11-97-87-094 OA161 ORBITER + PROBES	8.000	.000	.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

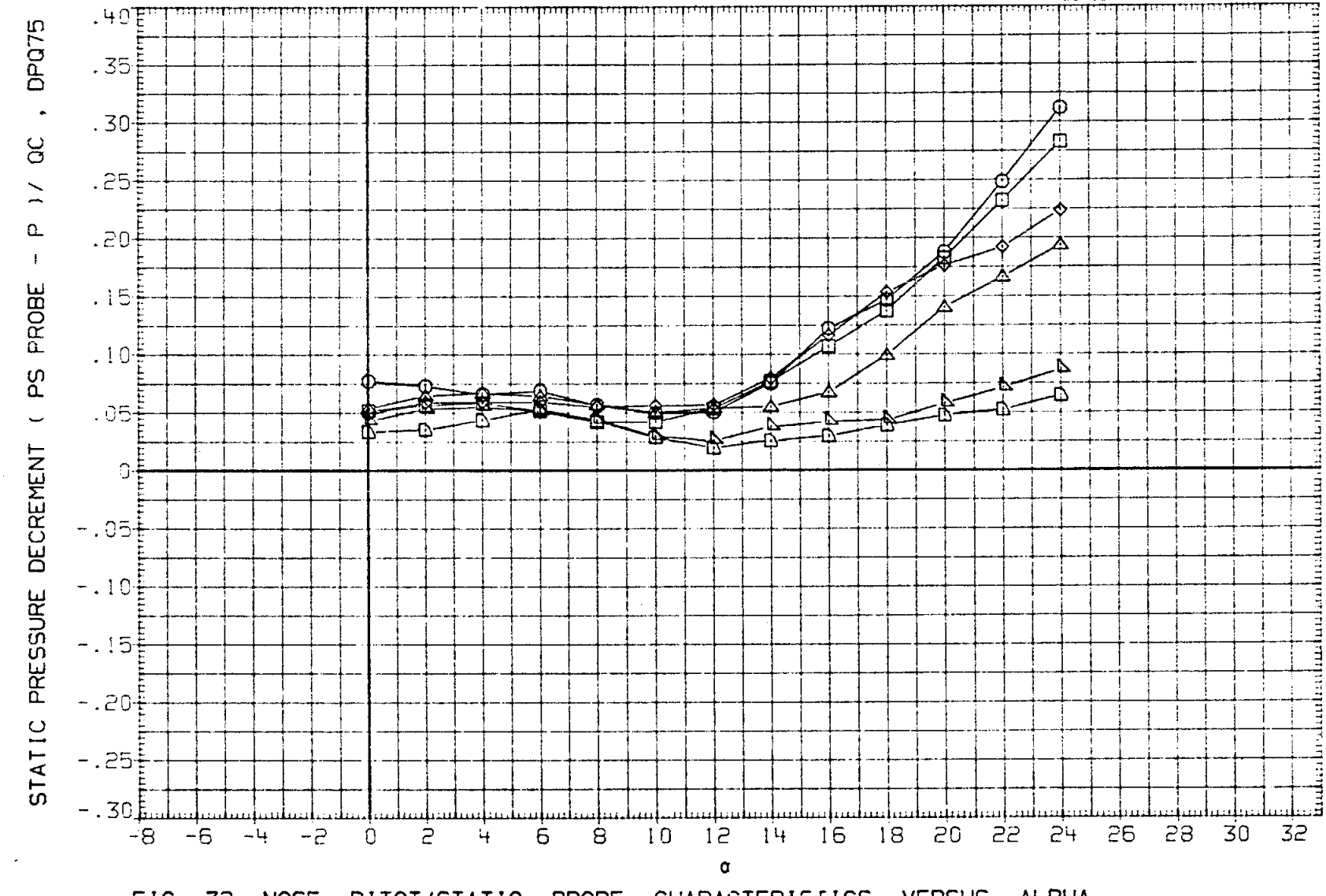


FIG. 32 NOSE PITOT/STATIC PROBE CHARACTERISTICS VERSUS ALPHA AT VARIOUS BETAS

(B)MACH = .60

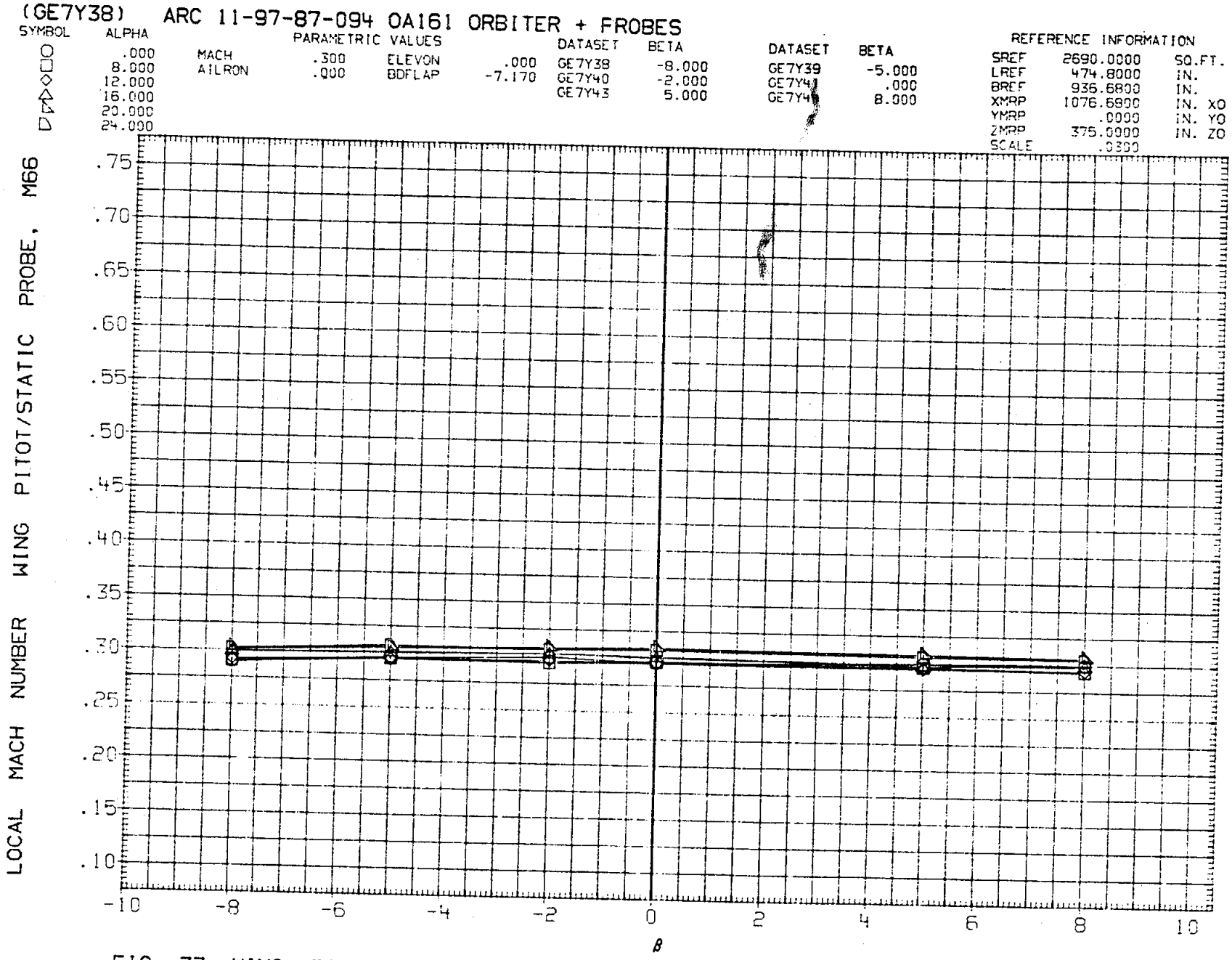


FIG. 33 WING PITOT/STATIC PROBE CHARACTERISTICS VERSUS BETA AT VARIOUS ALPHAS

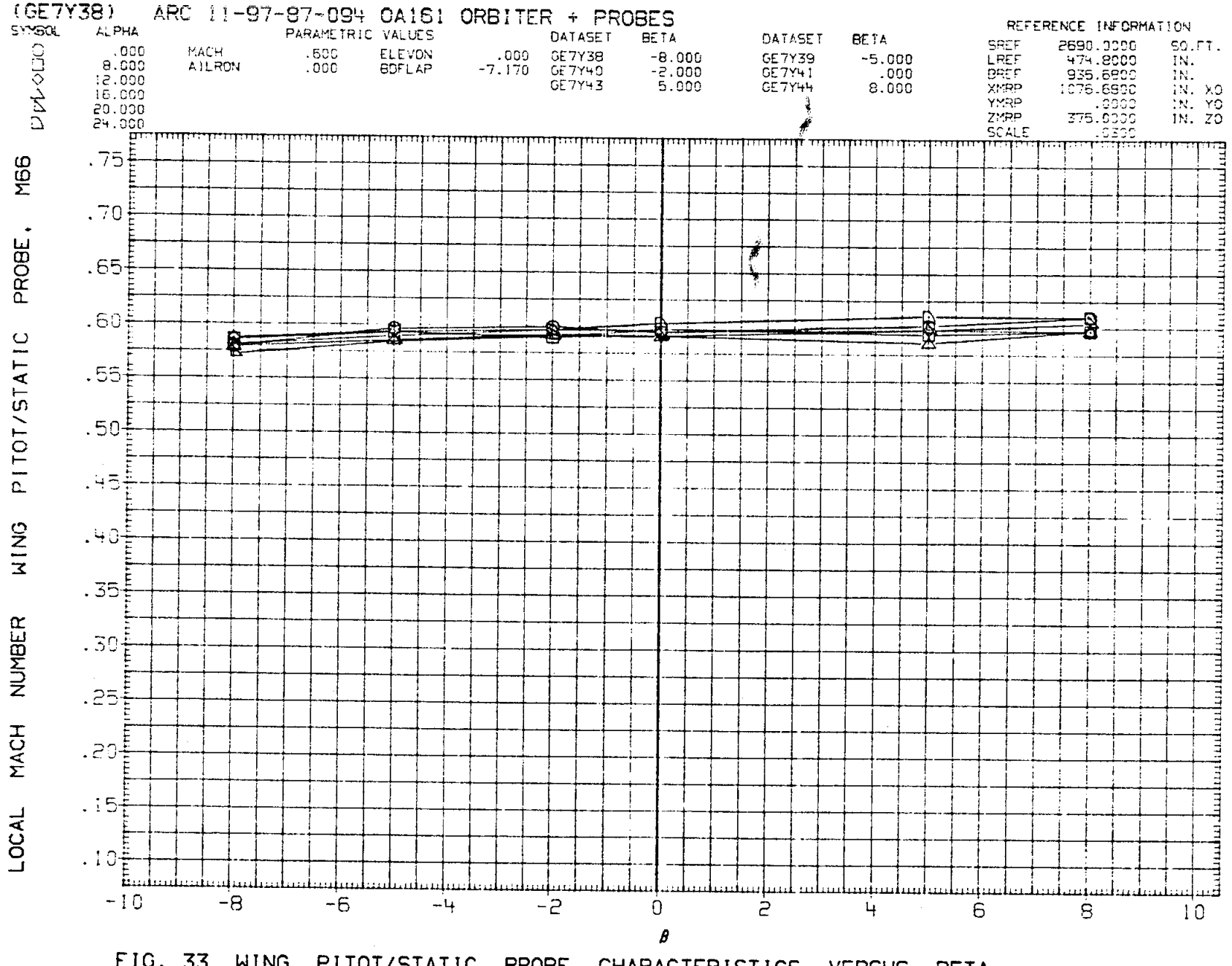


FIG. 33 WING PITOT/STATIC PROBE CHARACTERISTICS VERSUS BETA AT VARIOUS ALPHAS

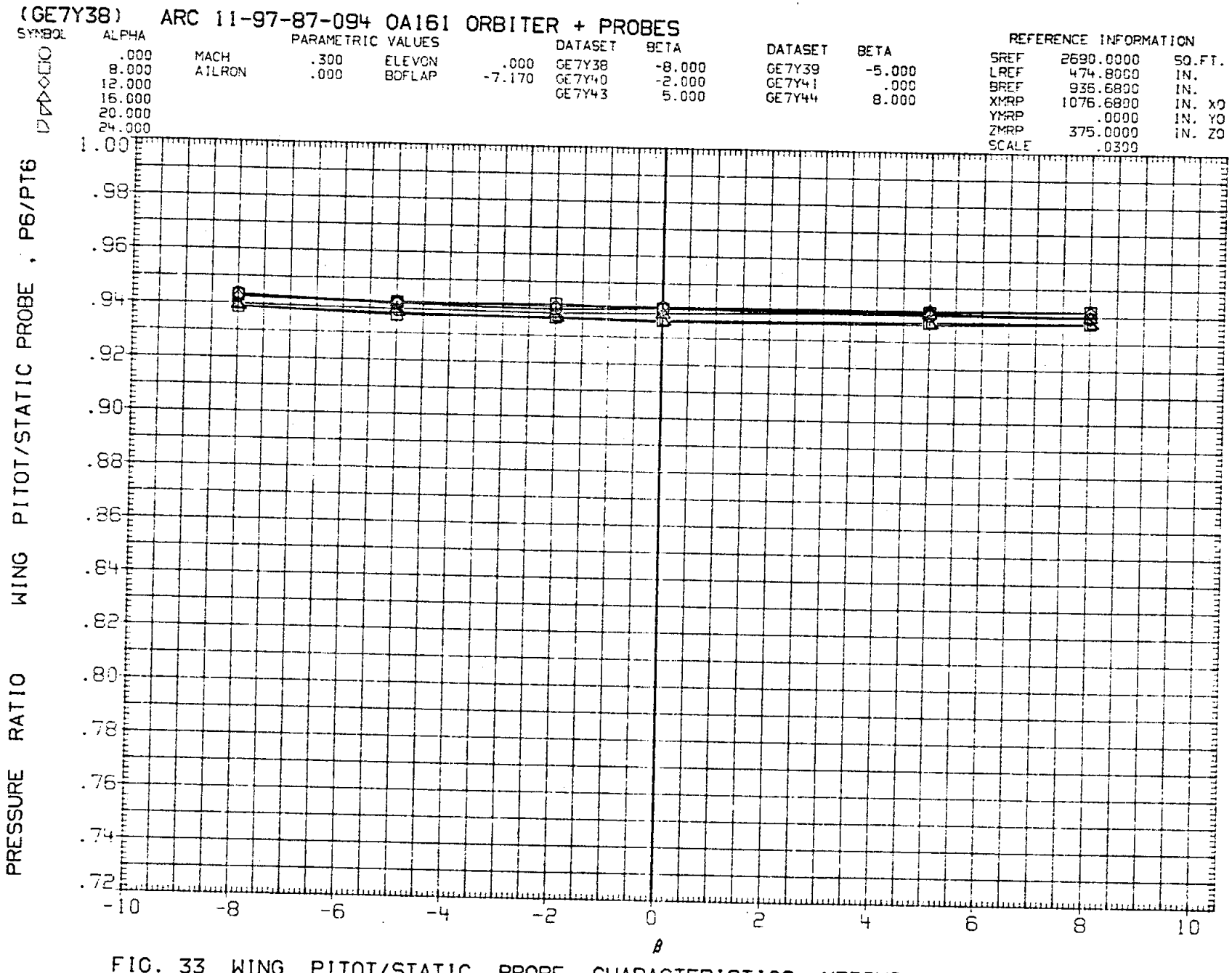


FIG. 33 WING PITOT/STATIC PROBE CHARACTERISTICS VERSUS BETA AT VARIOUS ALPHAS

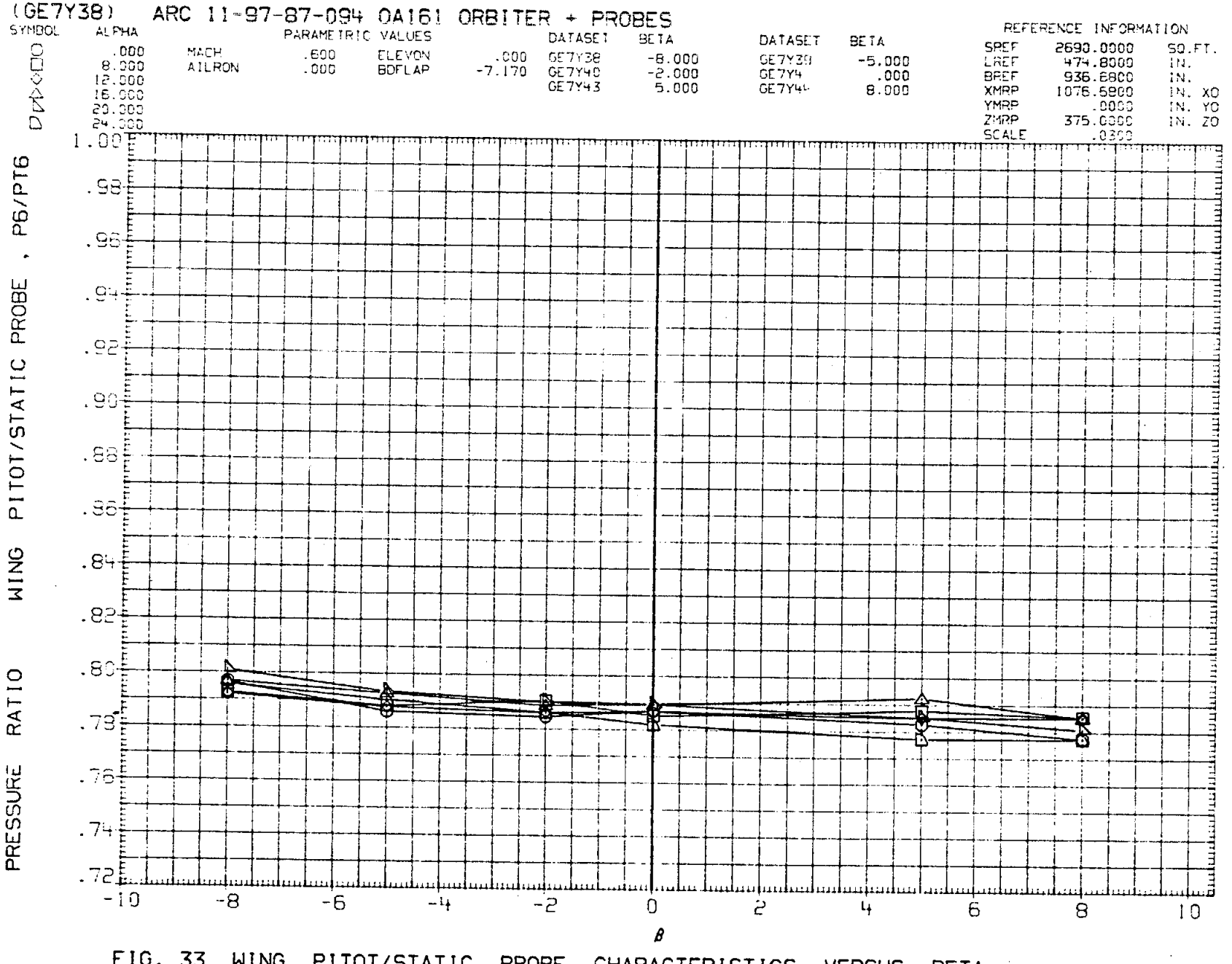


FIG. 33 WING PITOT/STATIC PROBE CHARACTERISTICS VERSUS BETA AT VARIOUS ALPHAS

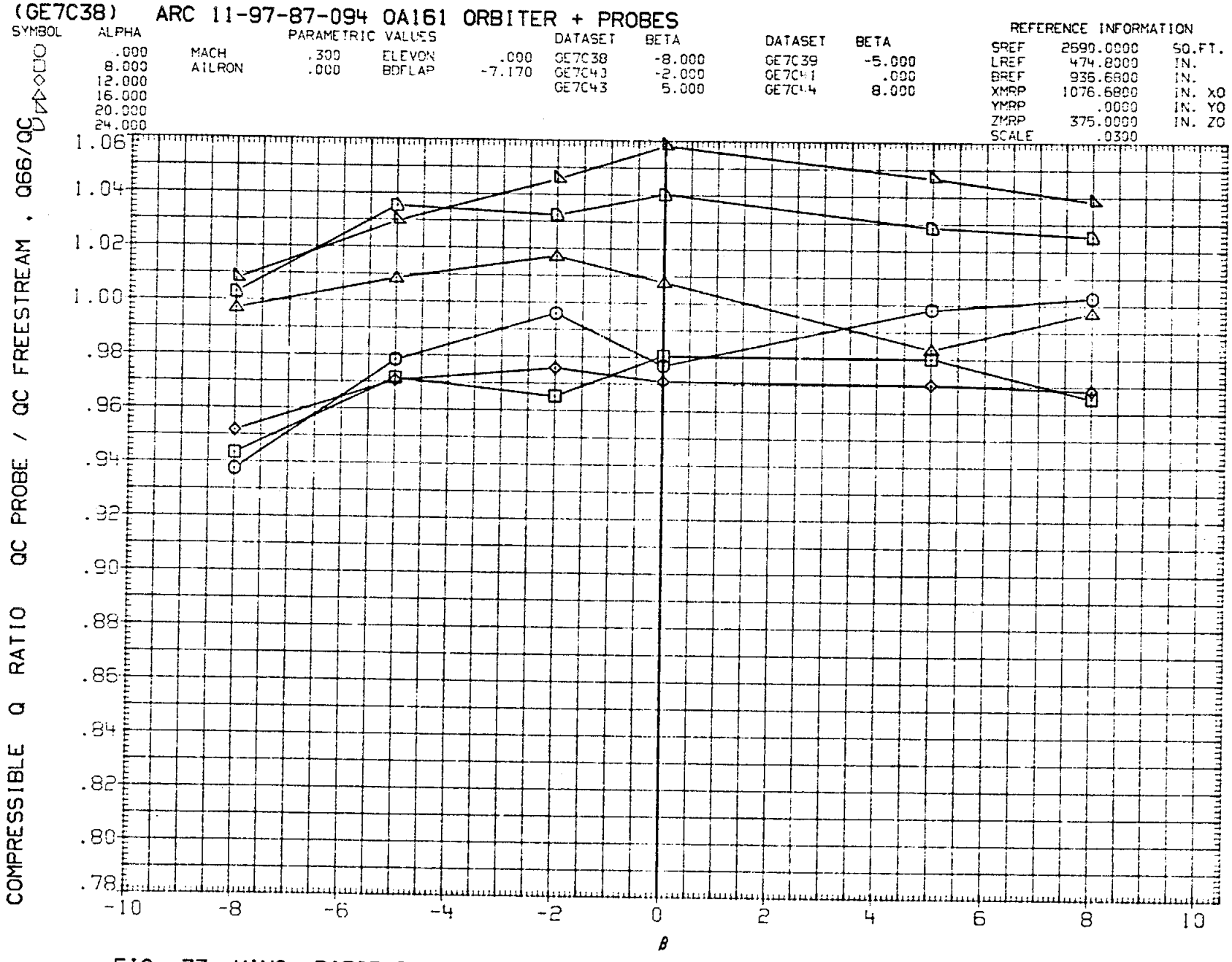


FIG. 33 WING PITOT/STATIC PROBE CHARACTERISTICS VERSUS BETA AT VARIOUS ALPHAS

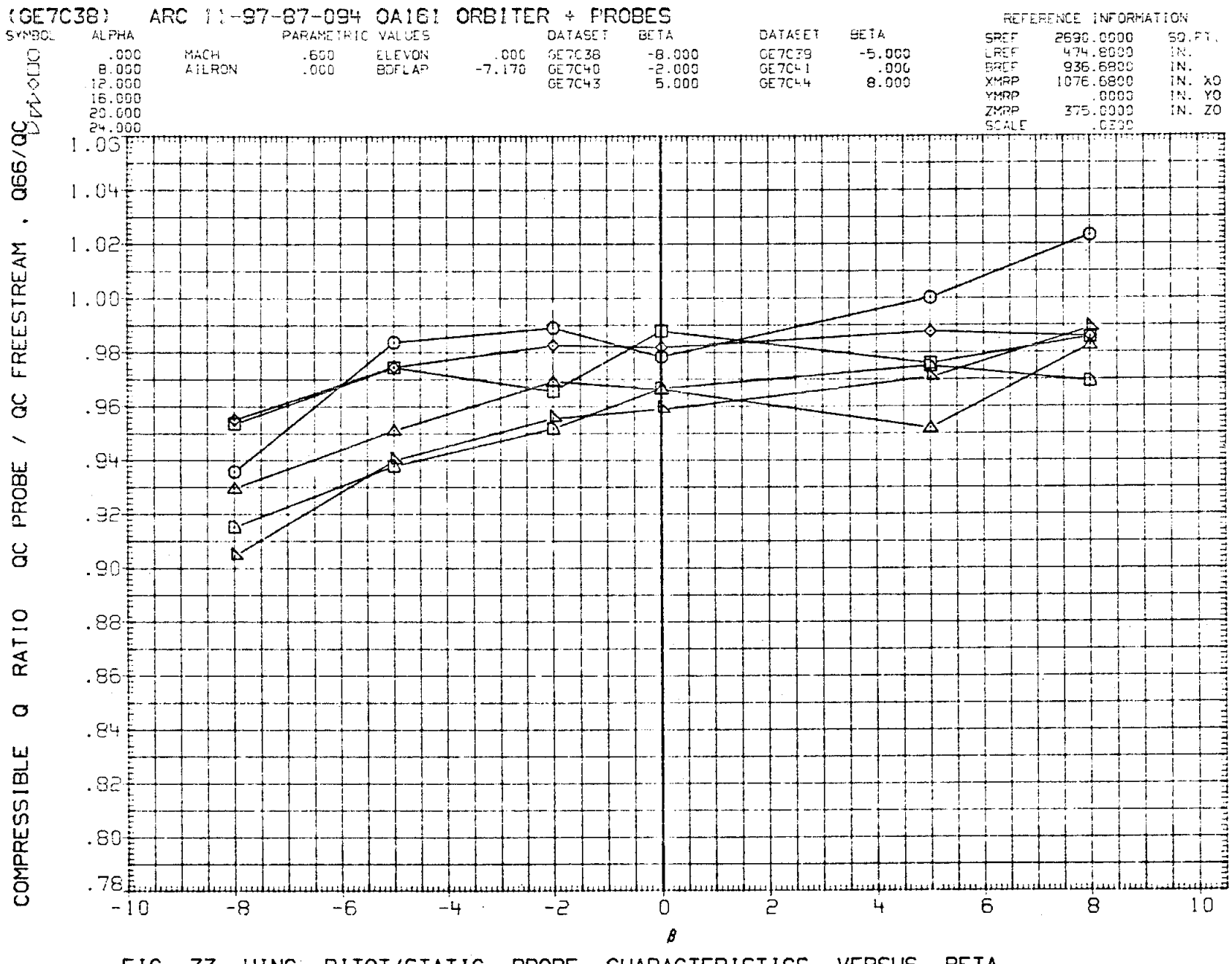


FIG. 33 WING PITOT/STATIC PROBE CHARACTERISTICS VERSUS BETA AT VARIOUS ALPHAS

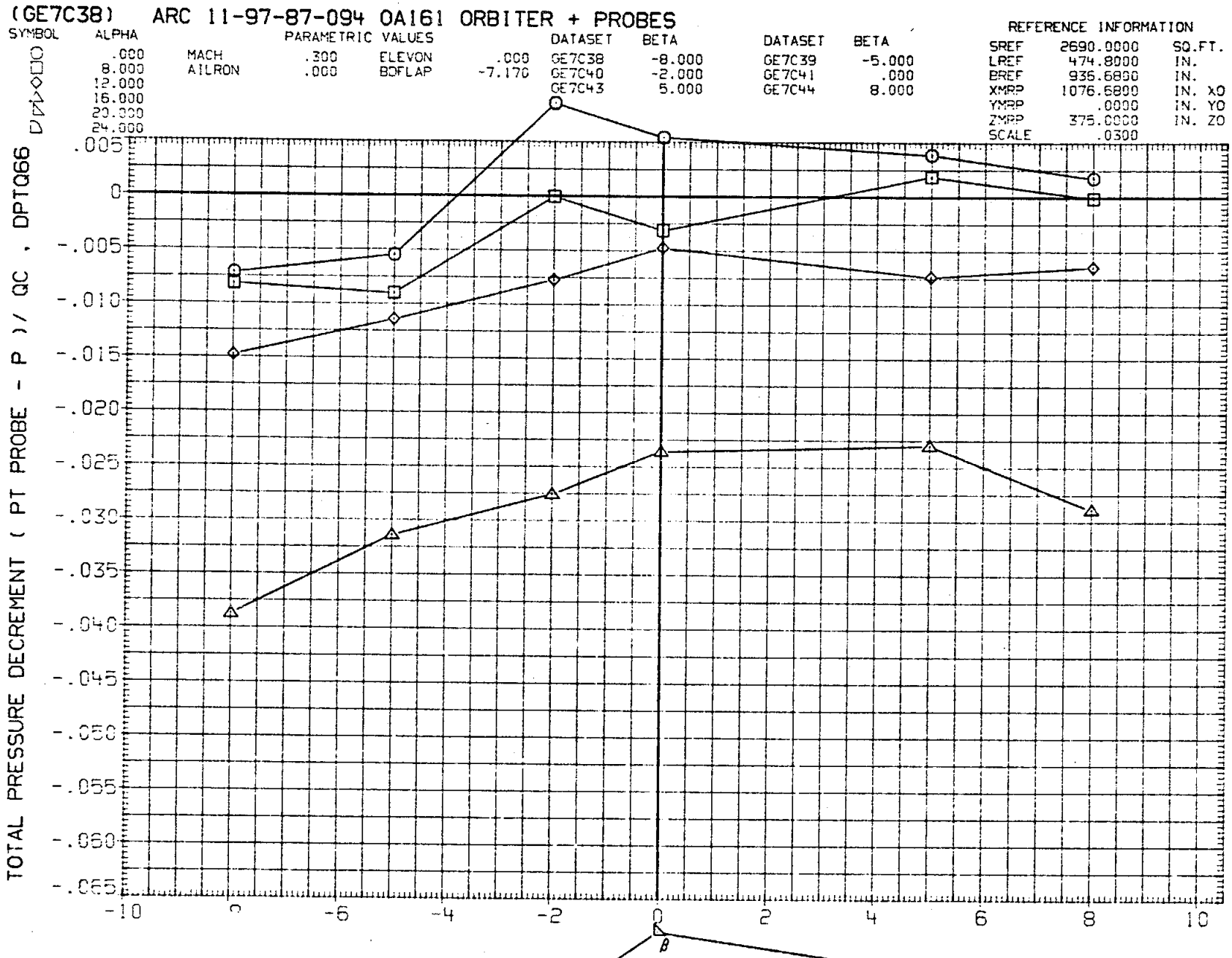


FIG. 33 WING PITOT/STATIC PROBE CHARACTERISTICS VERSUS BETA AT VARIOUS ALPHAS

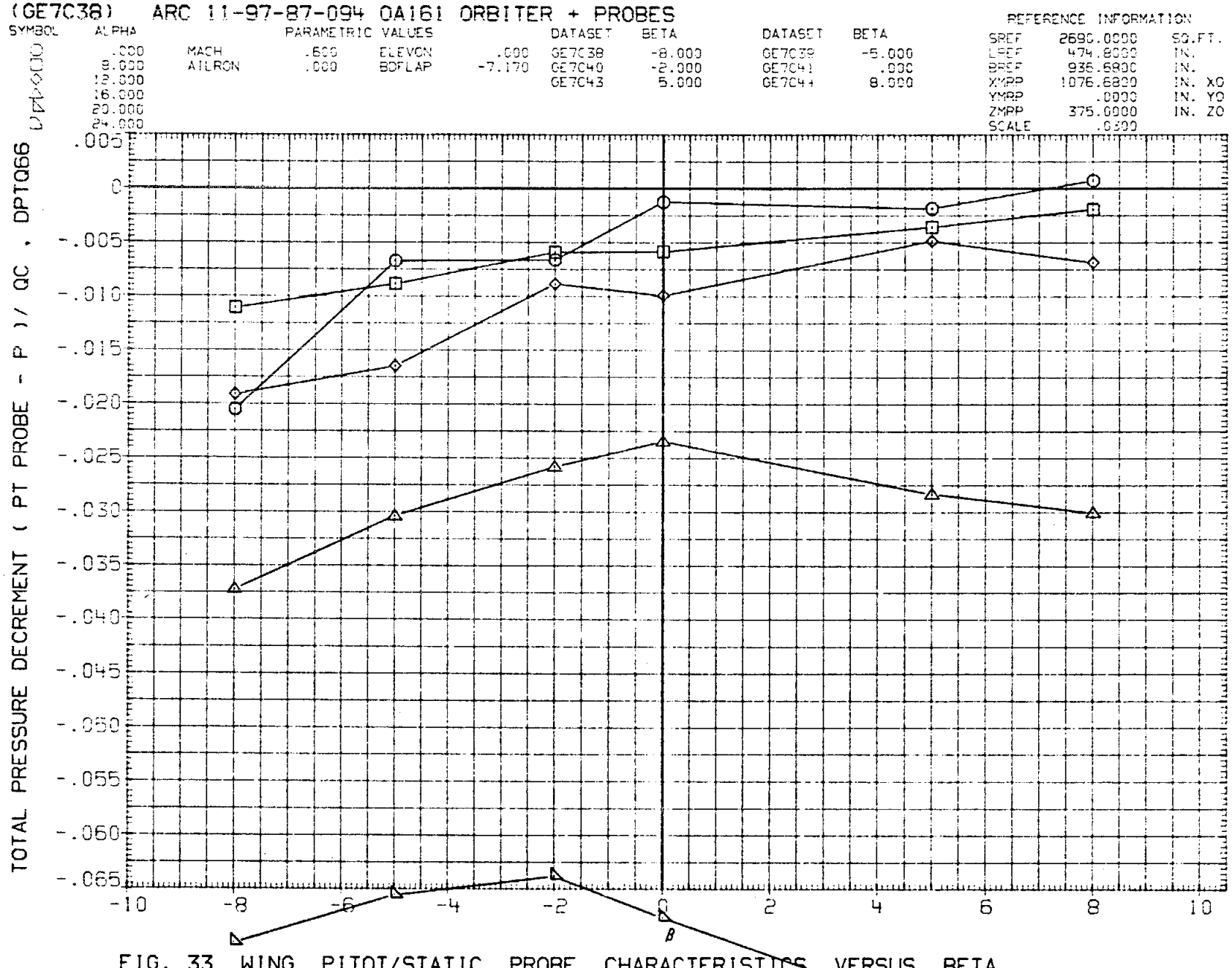


FIG. 33 WING PITOT/STATIC PROBE CHARACTERISTICS VERSUS BETA AT VARIOUS ALPHAS

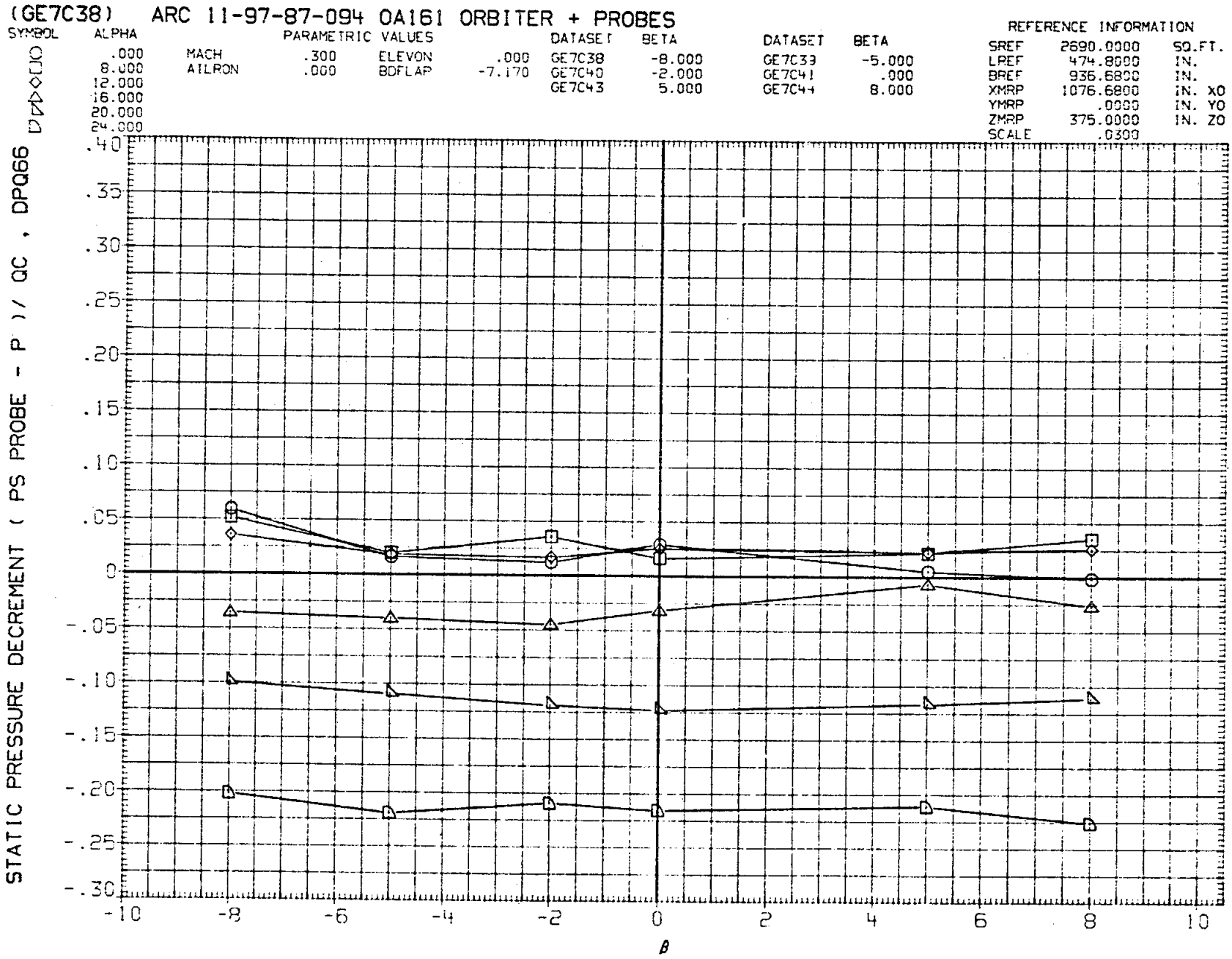


FIG. 33 WING PITOT/STATIC PROBE CHARACTERISTICS VERSUS BETA AT VARIOUS ALPHAS

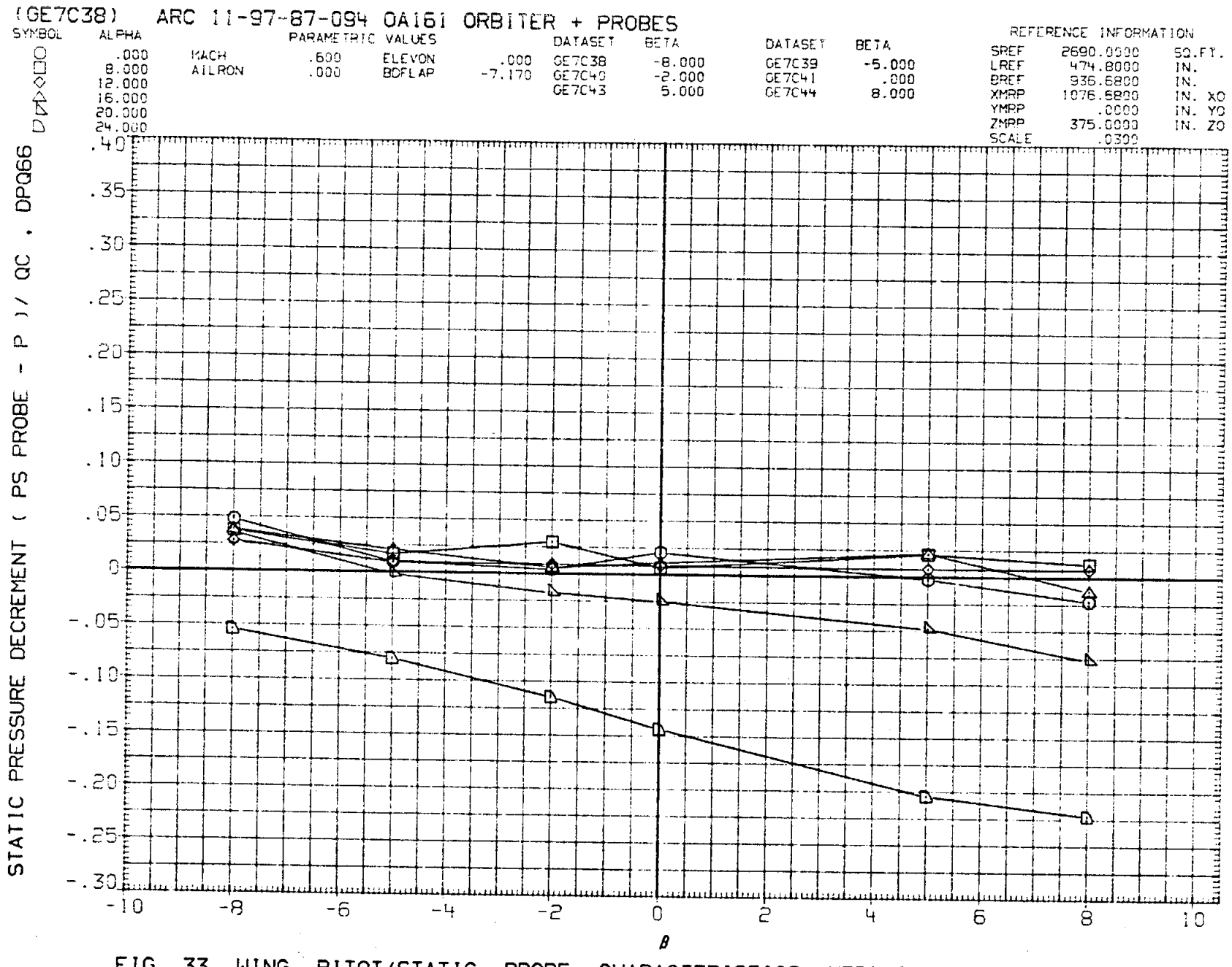


FIG. 33 WING PITOT/STATIC PROBE CHARACTERISTICS VERSUS BETA AT VARIOUS ALPHAS

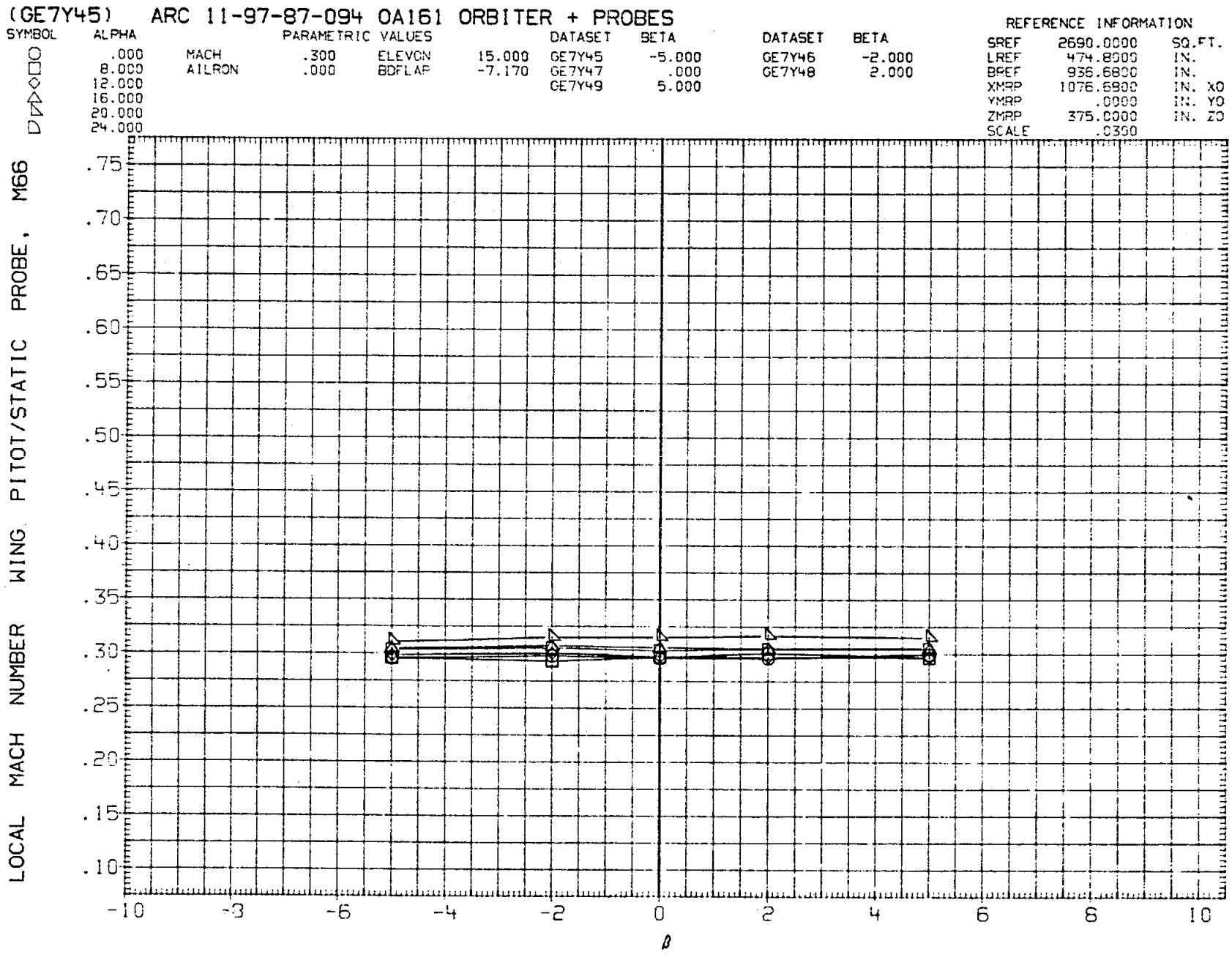


FIG. 33 WING PITOT/STATIC PROBE CHARACTERISTICS VERSUS BETA AT VARIOUS ALPHAS

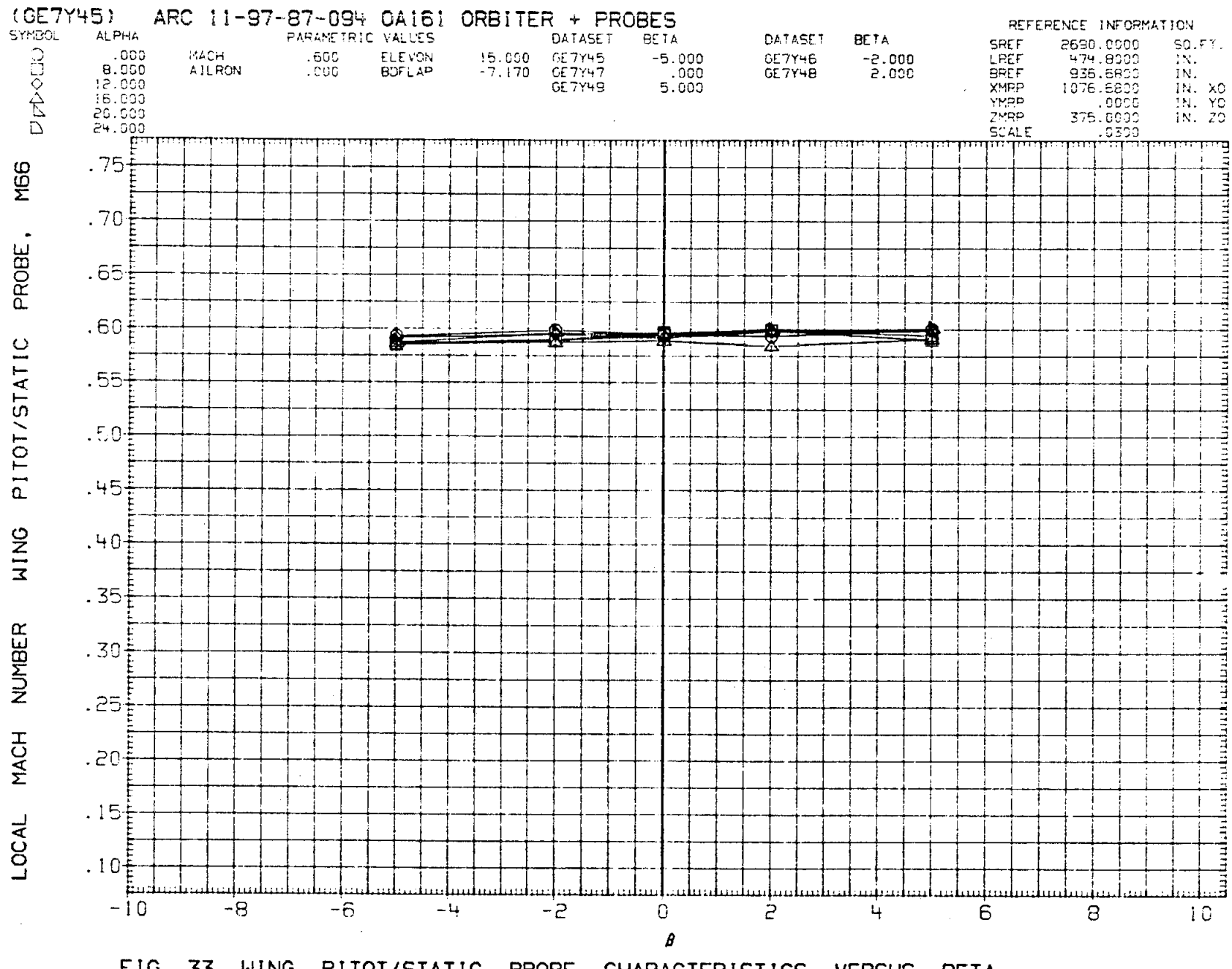


FIG. 33 WING PITOT/STATIC PROBE CHARACTERISTICS VERSUS BETA AT VARIOUS ALPHAS

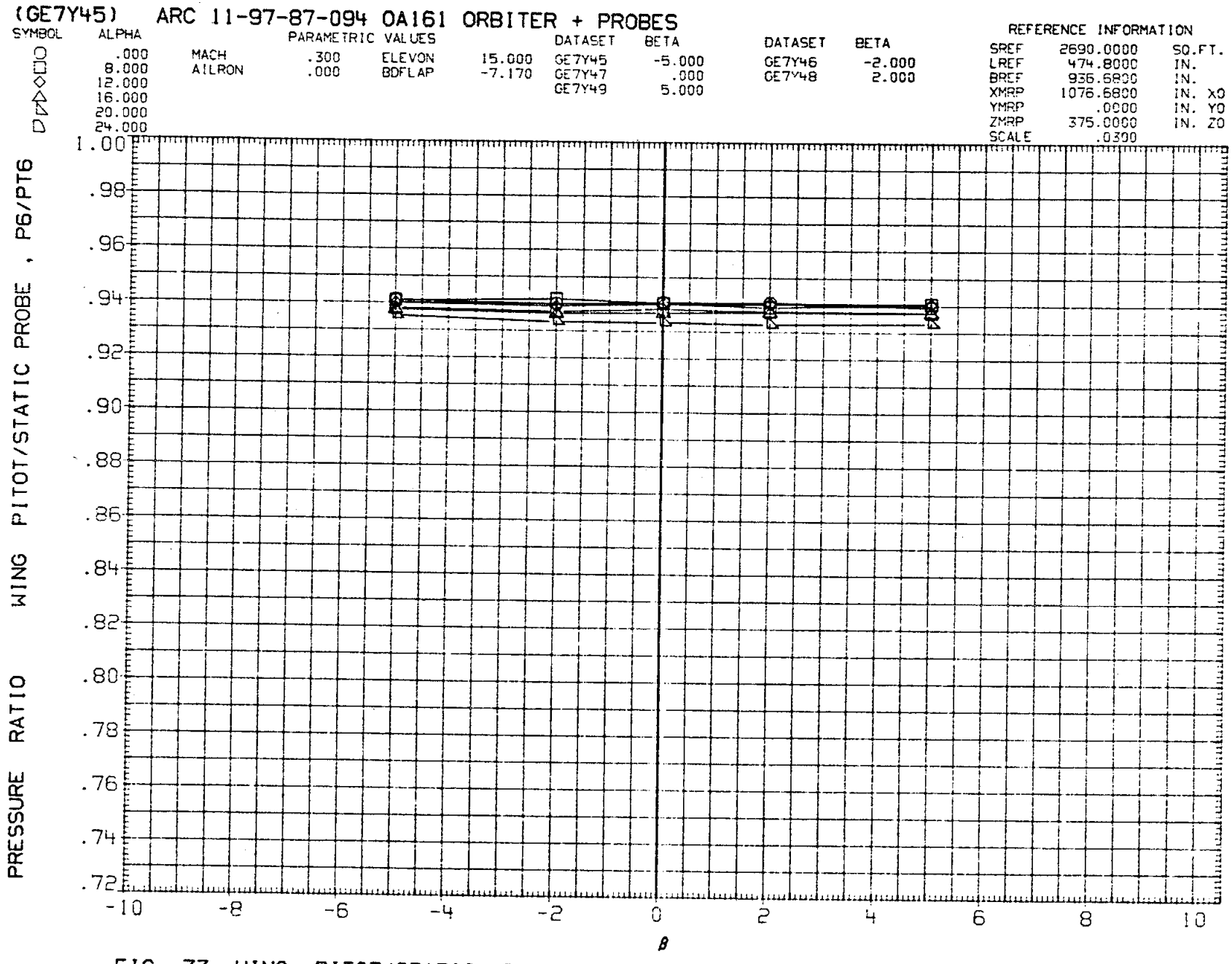


FIG. 33 WING PITOT/STATIC PROBE CHARACTERISTICS VERSUS BETA AT VARIOUS ALPHAS

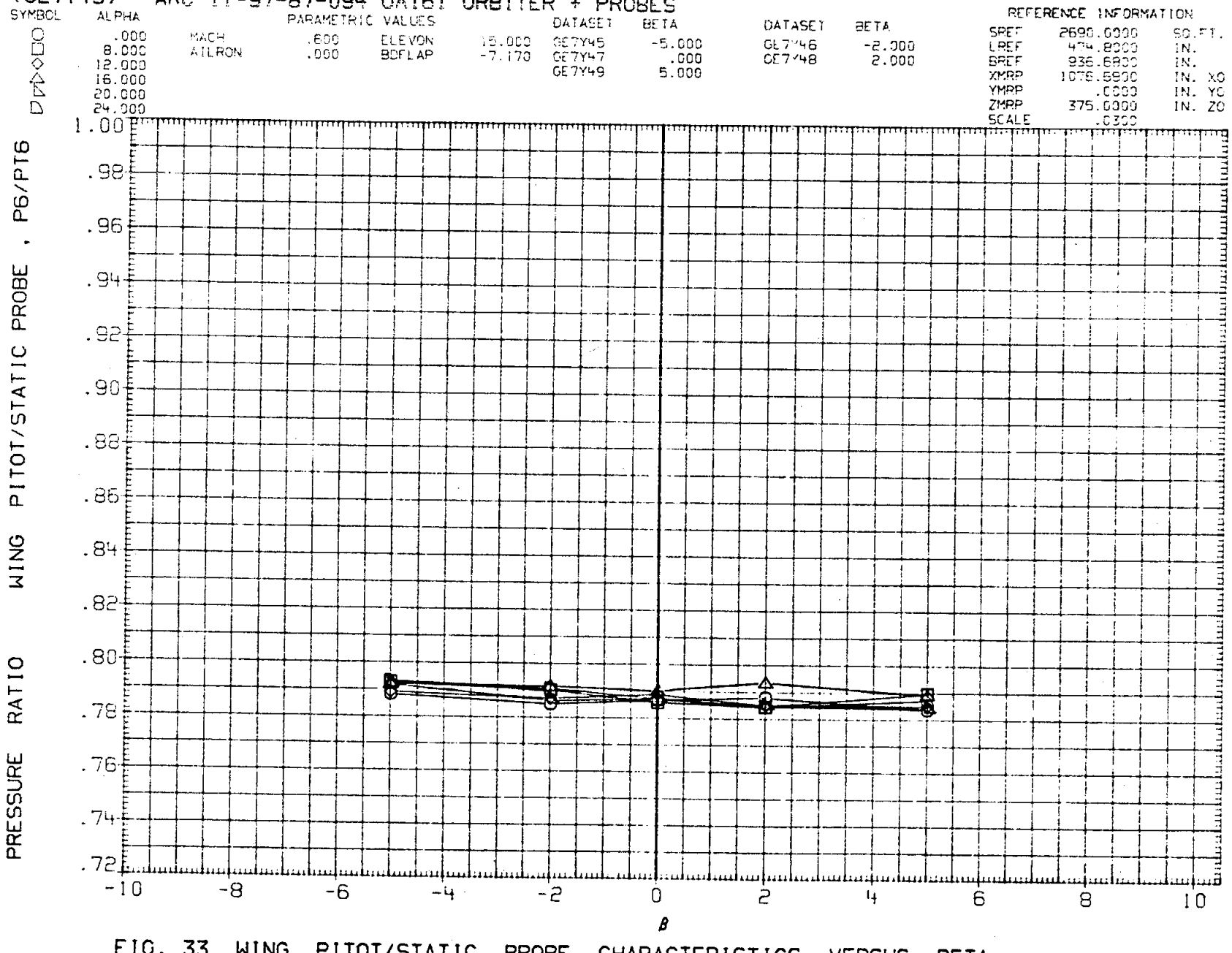


FIG. 33 WING PITOT/STATIC PROBE CHARACTERISTICS VERSUS BETA AT VARIOUS ALPHAS

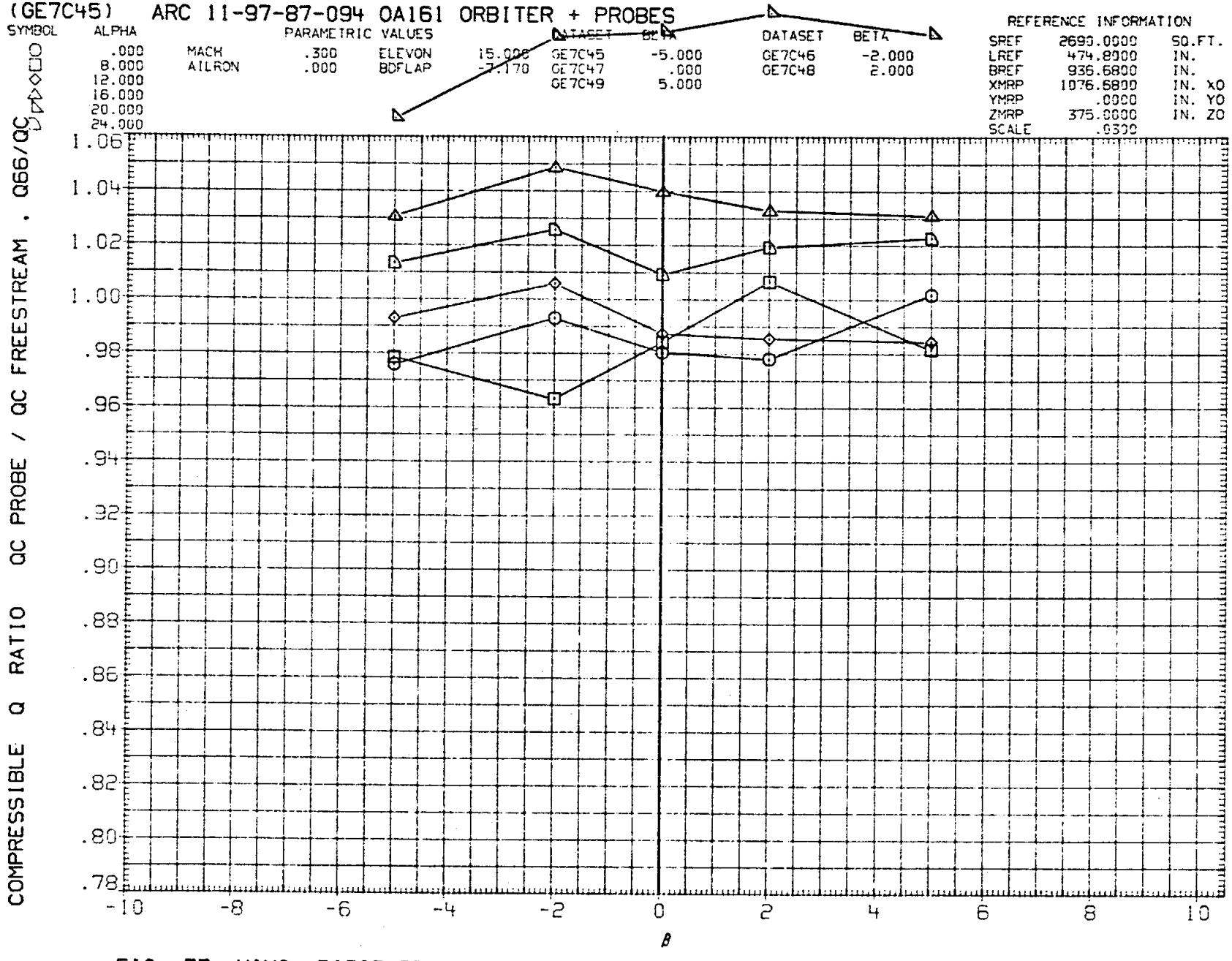


FIG. 33 WING PITOT/STATIC PROBE CHARACTERISTICS VERSUS BETA AT VARIOUS ALPHAS

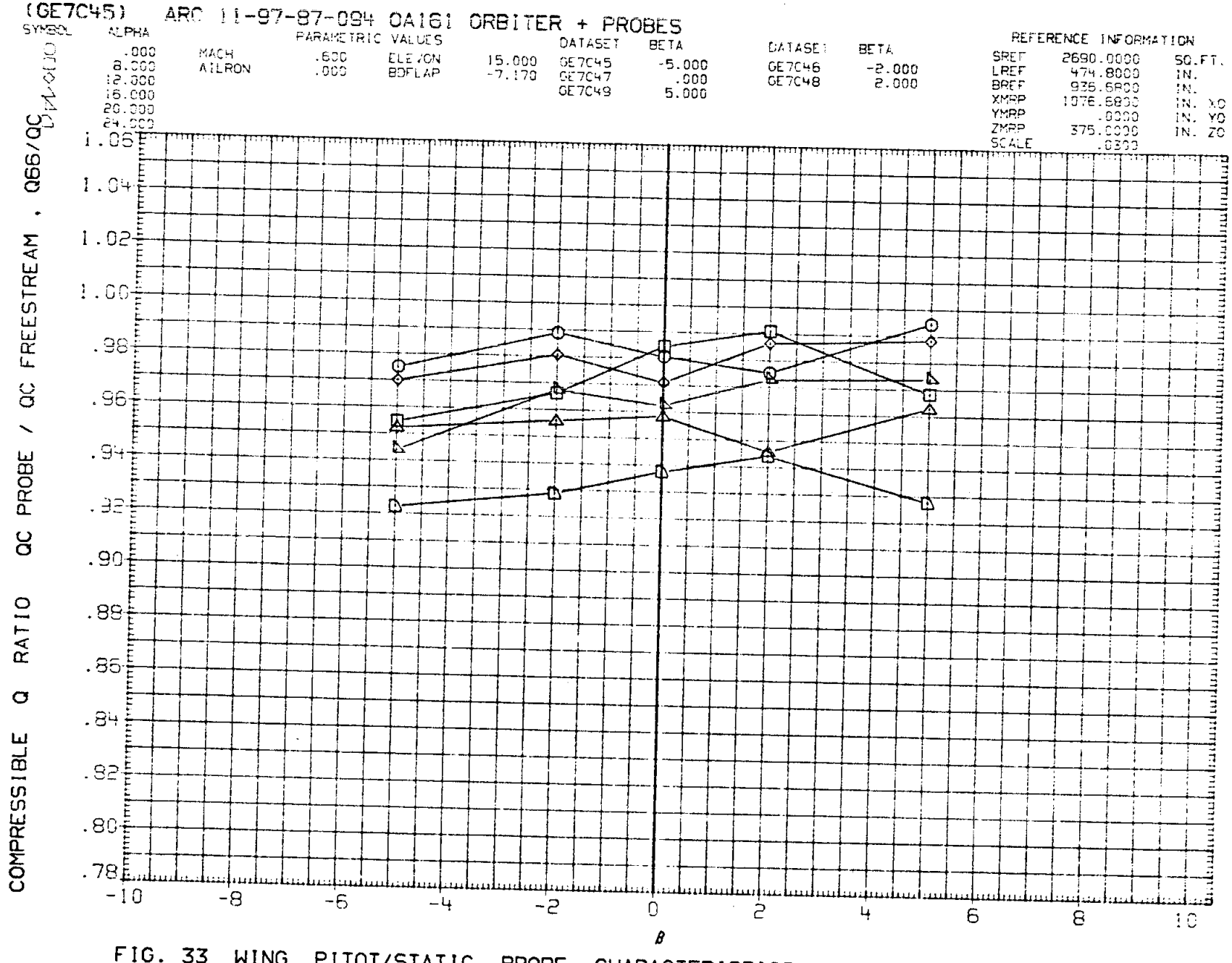


FIG. 33 WING PITOT/STATIC PROBE CHARACTERISTICS VERSUS BETA AT VARIOUS ALPHAS

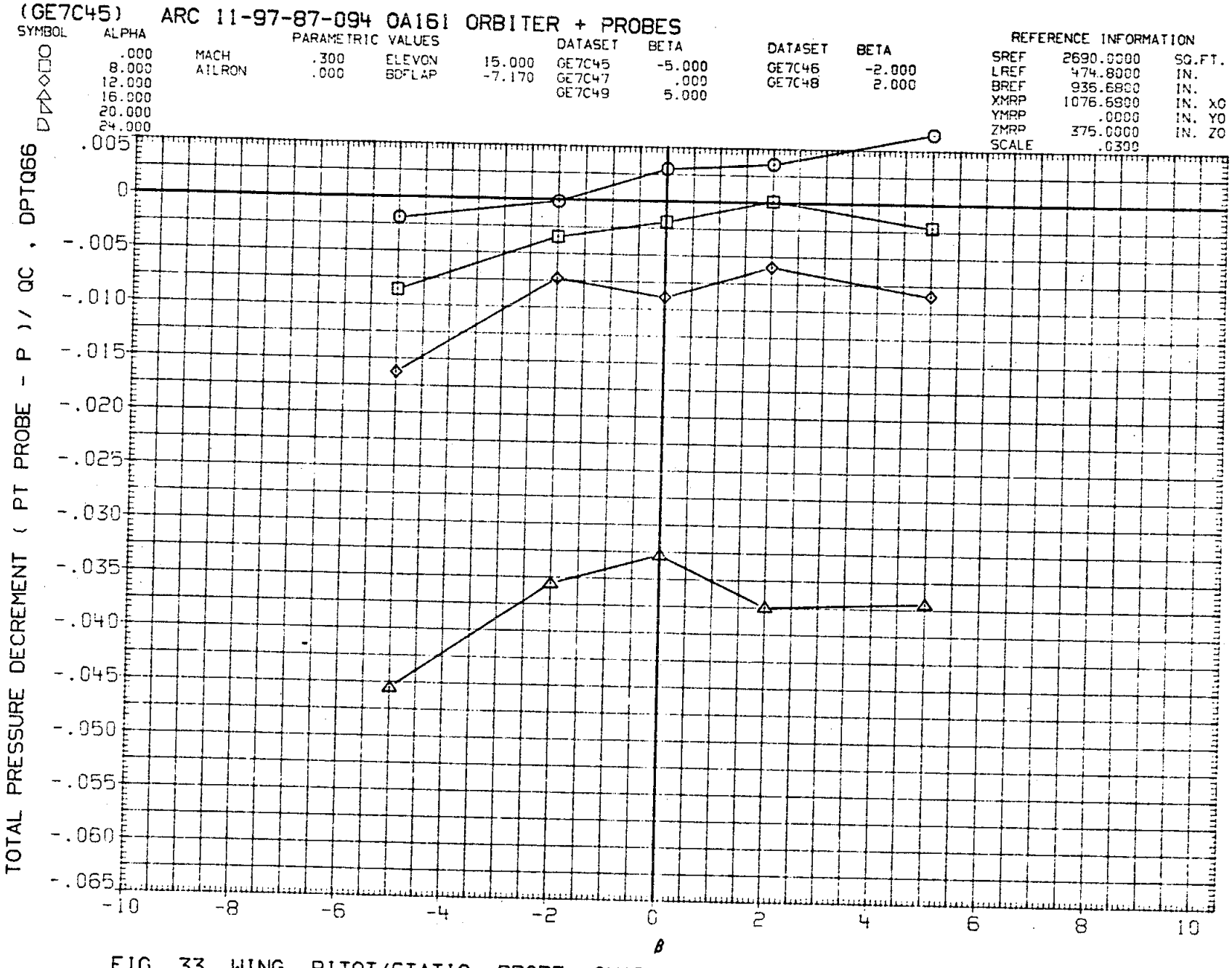


FIG. 33 WING PITOT/STATIC PROBE CHARACTERISTICS VERSUS BETA AT VARIOUS ALPHAS

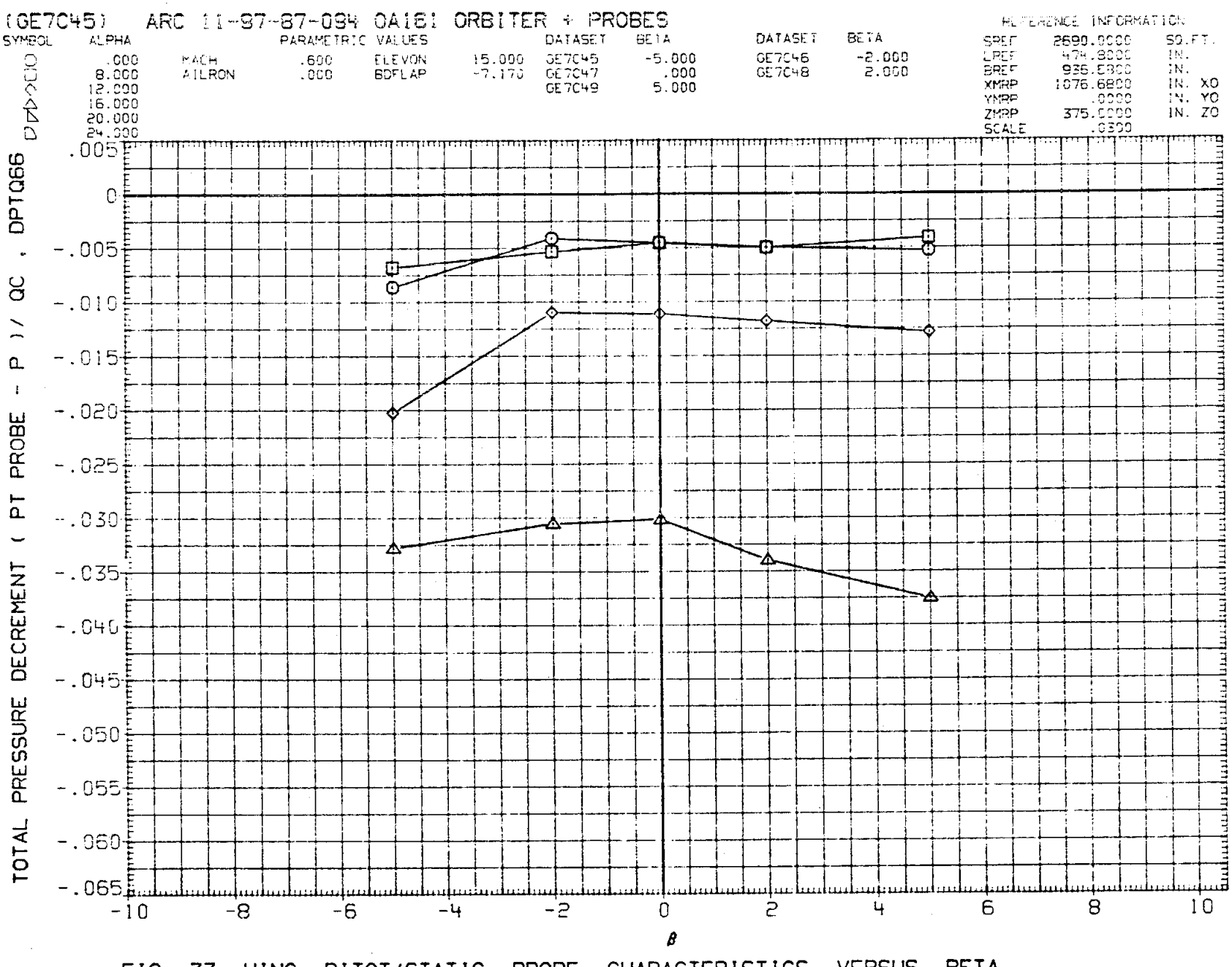


FIG. 33 WING PITOT/STATIC PROBE CHARACTERISTICS VERSUS BETA AT VARIOUS ALPHAS

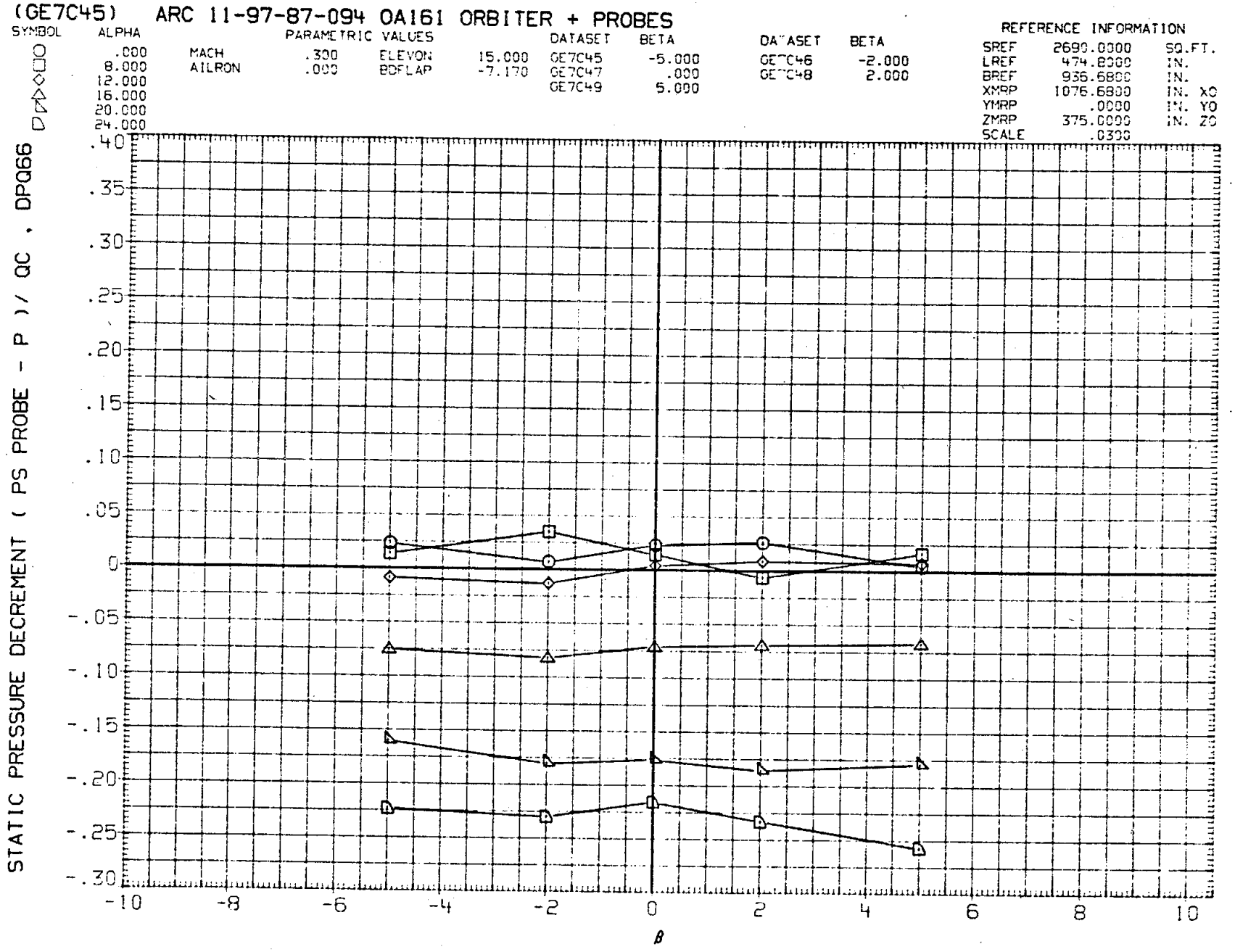


FIG. 33 WING PITOT/STATIC PROBE CHARACTERISTICS VERSUS BETA AT VARIOUS ALPHAS

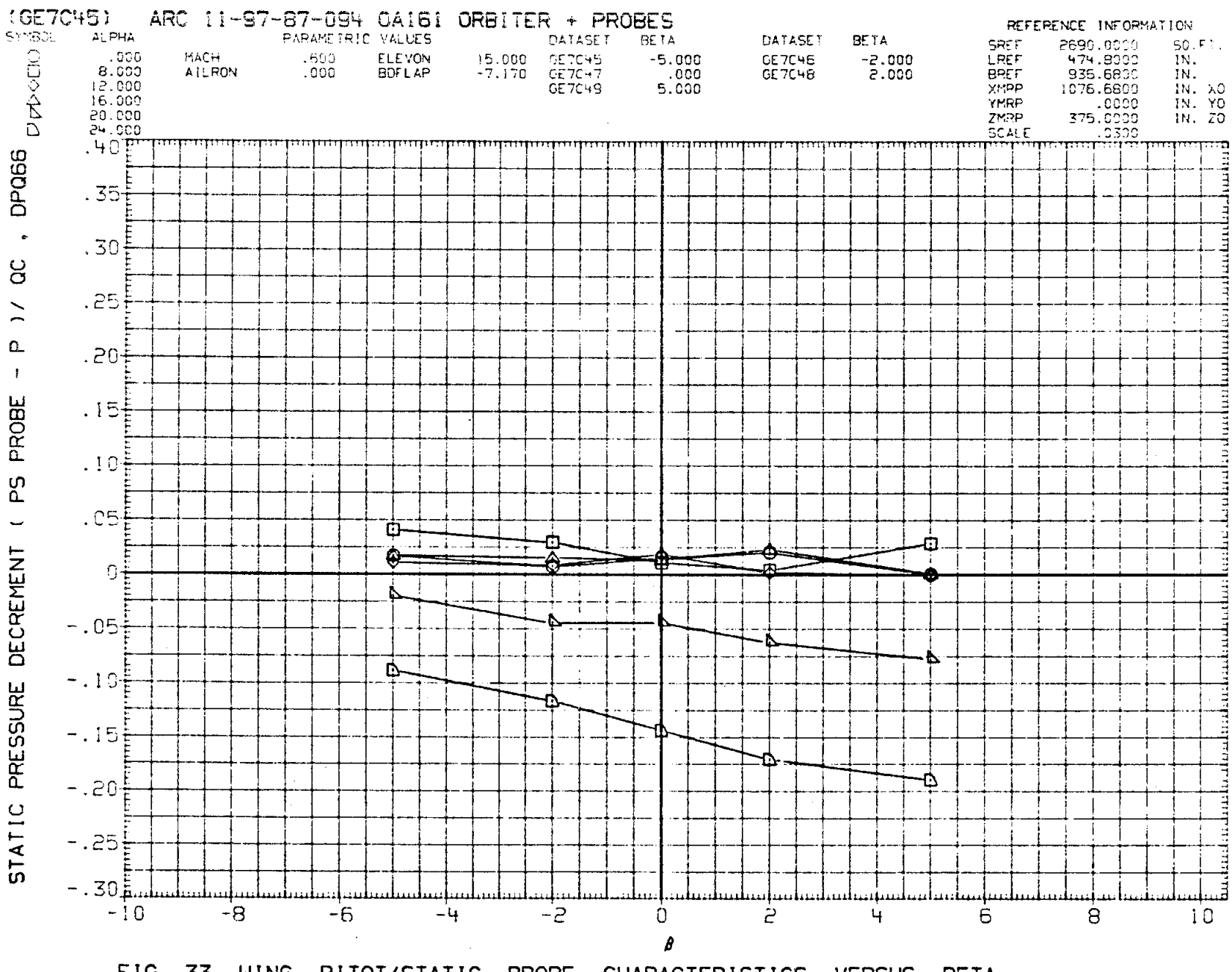


FIG. 33 WING PITOT/STATIC PROBE CHARACTERISTICS VERSUS BETA AT VARIOUS ALPHAS

DATA SET	SYMBOL	CONFIGURATION
GE7X45	○	ARC 11-97-87-094 OA161 ORBITER + PROBES
GE7X46	□	ARC 11-97-87-094 OA161 ORBITER + PROBES
GE7X47	◇	ARC 11-97-87-094 OA161 ORBITER + PROBES
GE7X48	△	ARC 11-97-87-094 OA161 ORBITER + PROBES
GE7X49	▽	ARC 11-97-87-094 OA161 ORBITER + PROBES

BETA	ELEVON	AILRON	BDFLAP
-5.000	15.000	.000	-7.170
-2.000	15.000	.000	-7.170
.000	15.000	.000	-7.170
2.000	15.000	.000	-7.170
5.000	15.000	.000	-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6900	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

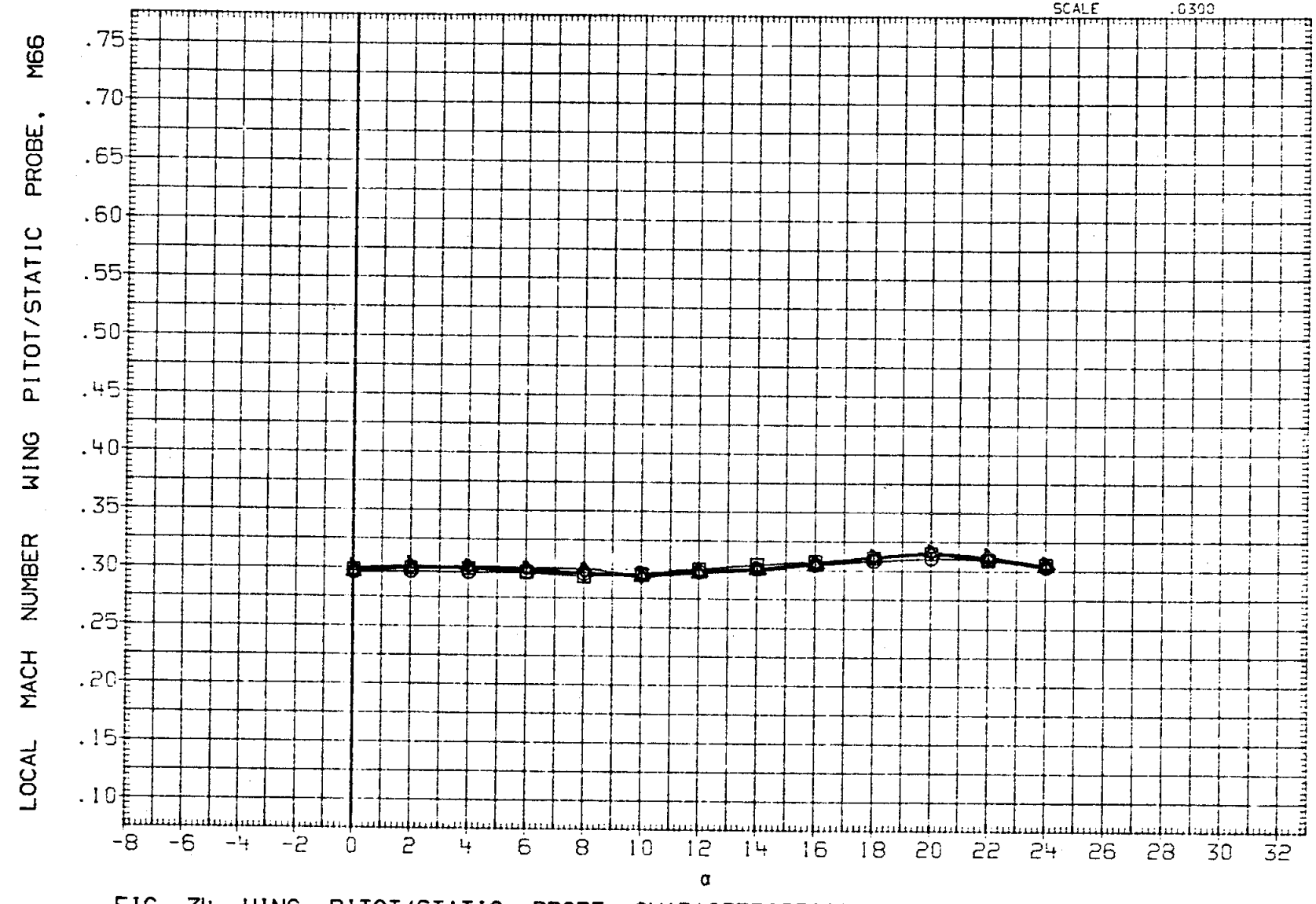


FIG. 34 WING PITOT/STATIC PROBE CHARACTERISTICS VERSUS ALPHA AT VARIOUS BETAS

(A)MACH = .30

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
GE7X45	○	ARC 11-97-87-094 OA161 ORBITER + PROBES	-5.000	15.000	.000	-7.170
GE7X46	□	ARC 11-97-87-094 OA161 ORBITER + PROBES	-2.000	15.000	.000	-7.170
GE7X47	◇	ARC 11-97-87-094 OA161 ORBITER + PROBES	.000	15.000	.000	-7.170
GE7X48	△	ARC 11-97-87-094 OA161 ORBITER + PROBES	2.000	15.000	.000	-7.170
GE7X49	▽	ARC 11-97-87-094 OA161 ORBITER + PROBES	5.000	15.000	.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0400	

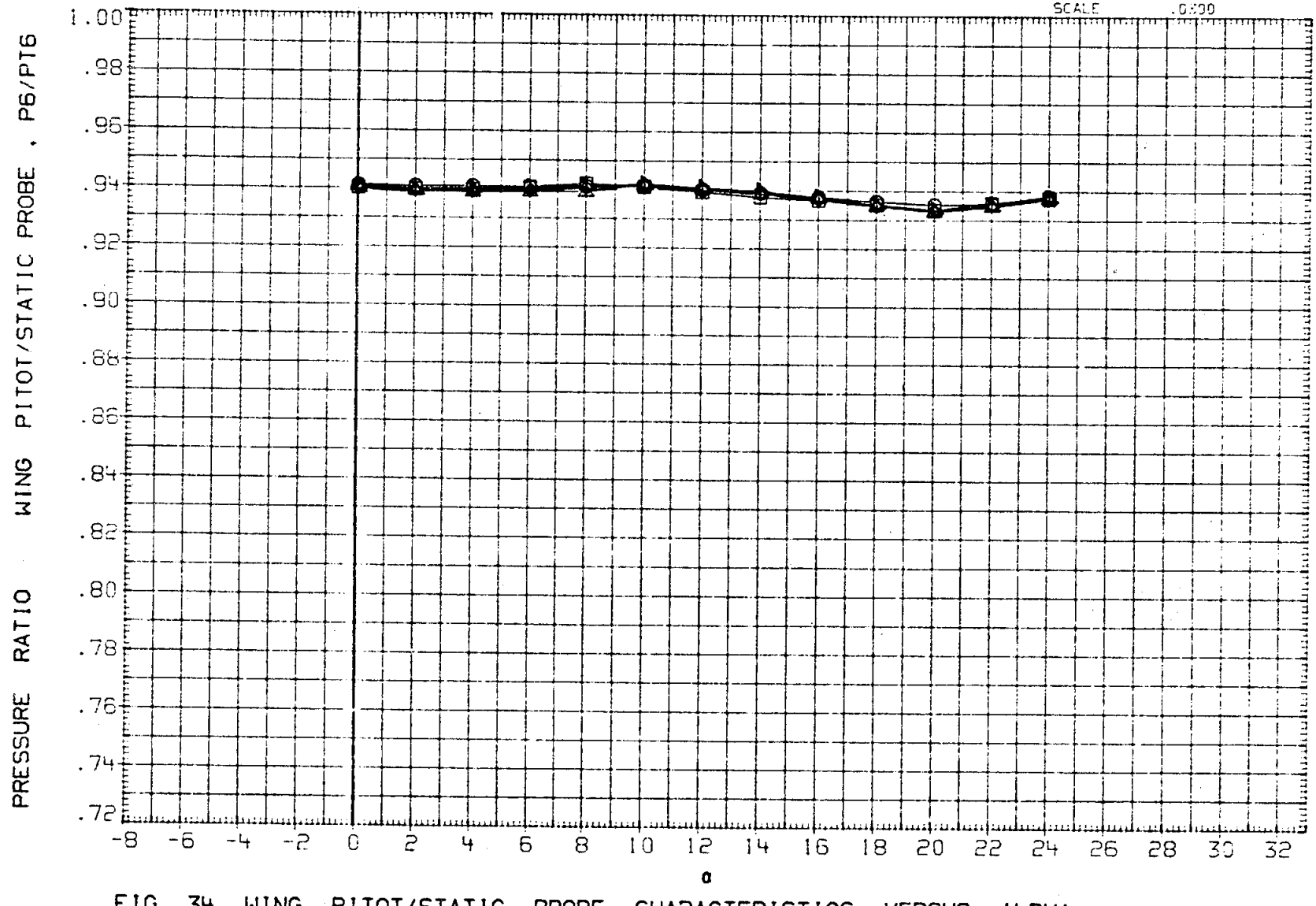


FIG. 34 WING PITOT/STATIC PROBE CHARACTERISTICS VERSUS ALPHA AT VARIOUS BETAS

(A)MACH = .30

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
GE7X45	○	ARC 11-97-87-094 OA161 ORBITER + PROBES	-5.000	15.000	.000	-7.170
GE7X46	□	ARC 11-97-87-094 OA161 ORBITER + PROBES	-2.000	15.000	.000	-7.170
GE7X47	◇	ARC 11-97-87-094 OA161 ORBITER + PROBES	.000	15.000	.000	-7.170
GE7X48	△	ARC 11-97-87-094 OA161 ORBITER + PROBES	2.000	15.000	.000	-7.170
GE7X49	▽	ARC 11-97-87-094 OA161 ORBITER + PROBES	5.000	15.000	.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.5800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

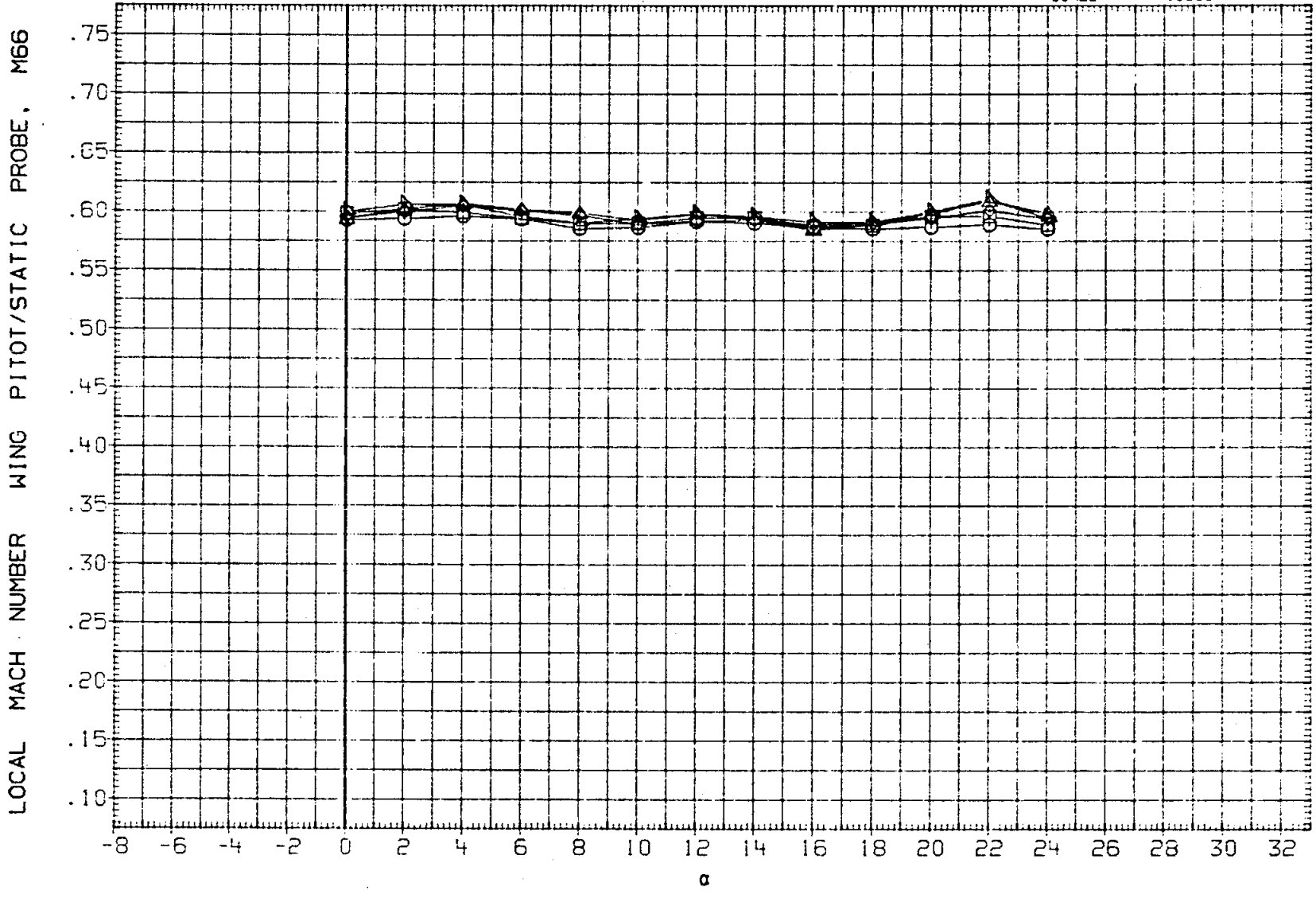


FIG. 34 WING PITOT/STATIC PROBE CHARACTERISTICS VERSUS ALPHA AT VARIOUS BETAS

(B)MACH = .60

DATA SET	SYMBOL	CONFIGURATION
GE7X45	○	ARC 11-97-87-094 OA161 ORBITER + PROBES
GE7X46	□	ARC 11-97-87-094 OA161 ORBITER + PROBES
GE7X47	◇	ARC 11-97-87-094 OA161 ORBITER + PROBES
GE7X48	△	ARC 11-97-87-094 OA161 ORBITER + PROBES
GE7X49	▷	ARC 11-97-87-094 OA161 ORBITER + PROBES

BETA	ELEVON	AILRON	BDFLAP
-5.000	15.000	.000	-7.170
-2.000	15.000	.000	-7.170
.000	15.000	.000	-7.170
2.000	15.000	.000	-7.170
5.000	15.000	.000	-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

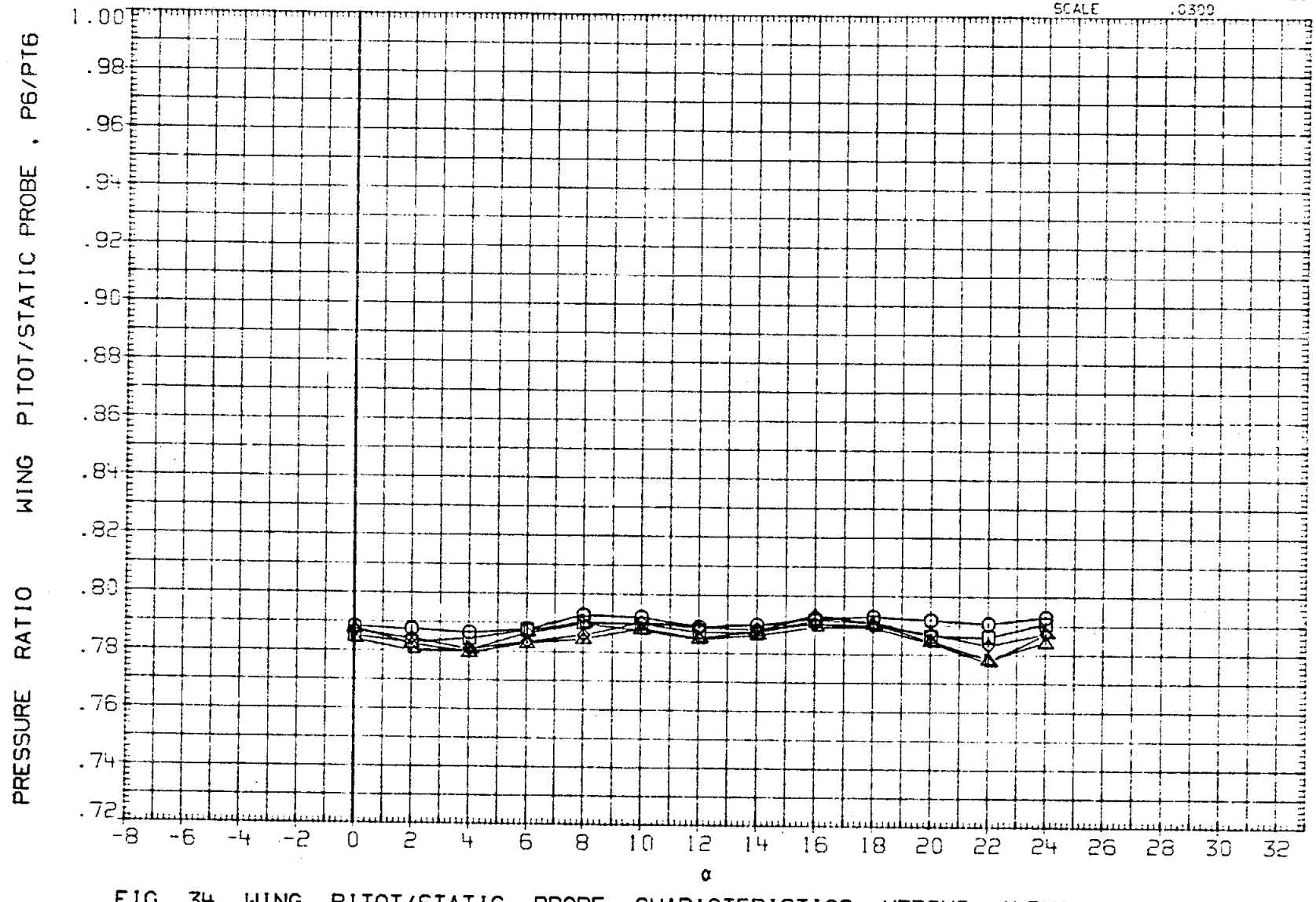


FIG. 34 WING PITOT/STATIC PROBE CHARACTERISTICS VERSUS ALPHA AT VARIOUS BETAS

(B)MACH = .60

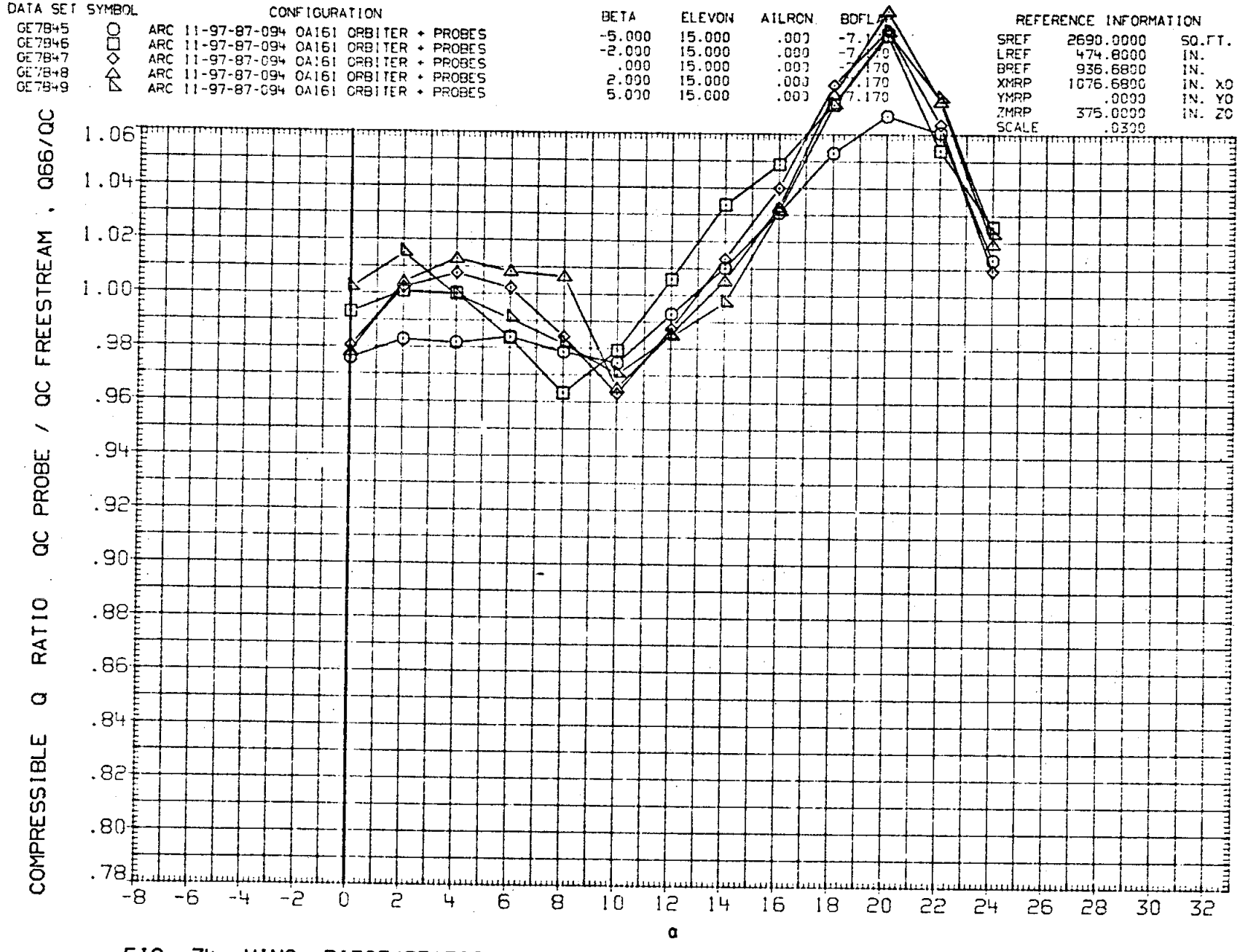


FIG. 34 WING PITOT/STATIC PROBE CHARACTERISTICS VERSUS ALPHA AT VARIOUS BETAS

(A) MACH = .30

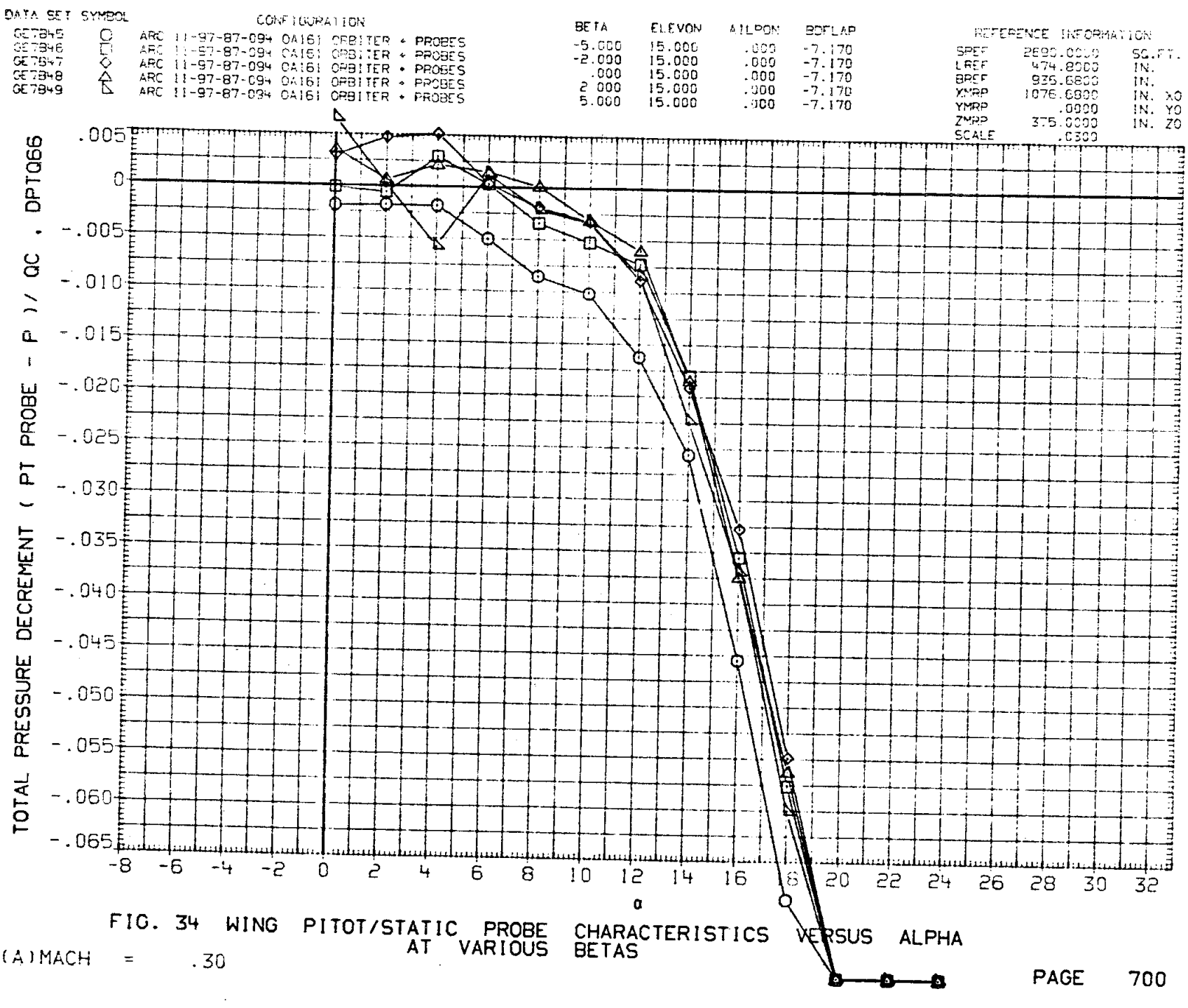


FIG. 34 WING PITOT/STATIC PROBE CHARACTERISTICS VERSUS ALPHA AT VARIOUS BETAS

(A)MACH = .30

DATA SET	SYMBOL	CONFIGURATION
GE7845	○	ARC 11-97-87-094 OA161 ORBITER + PROBES
GE7846	□	ARC 11-97-87-094 OA161 ORBITER + PROBES
GE7847	◇	ARC 11-97-87-094 OA161 ORBITER + PROBES
GE7848	△	ARC 11-97-87-094 OA161 ORBITER + PROBES
GE7849	▷	ARC 11-97-87-094 OA161 ORBITER + PROBES

BETA	ELEVON	AILRON	BDFLAP
-5.000	15.000	.000	-7.170
-2.000	15.000	.000	-7.170
.000	15.000	.000	-7.170
2.000	15.000	.000	-7.170
5.000	15.000	.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	376.0000	IN. ZO
SCALE	.0300	

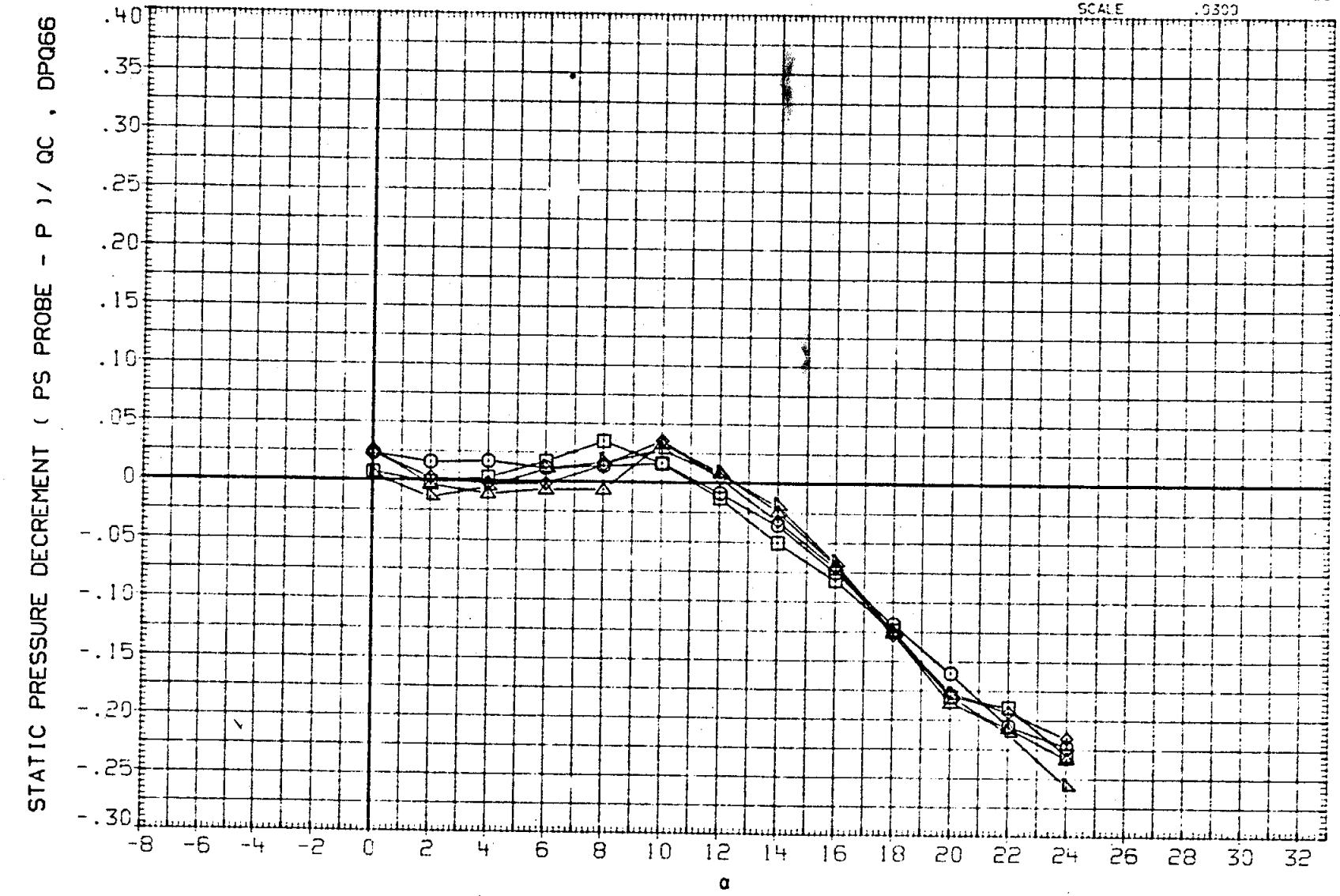


FIG. 34 WING PITOT/STATIC PROBE CHARACTERISTICS VERSUS ALPHA AT VARIOUS BETAS

(A) MACH = .30

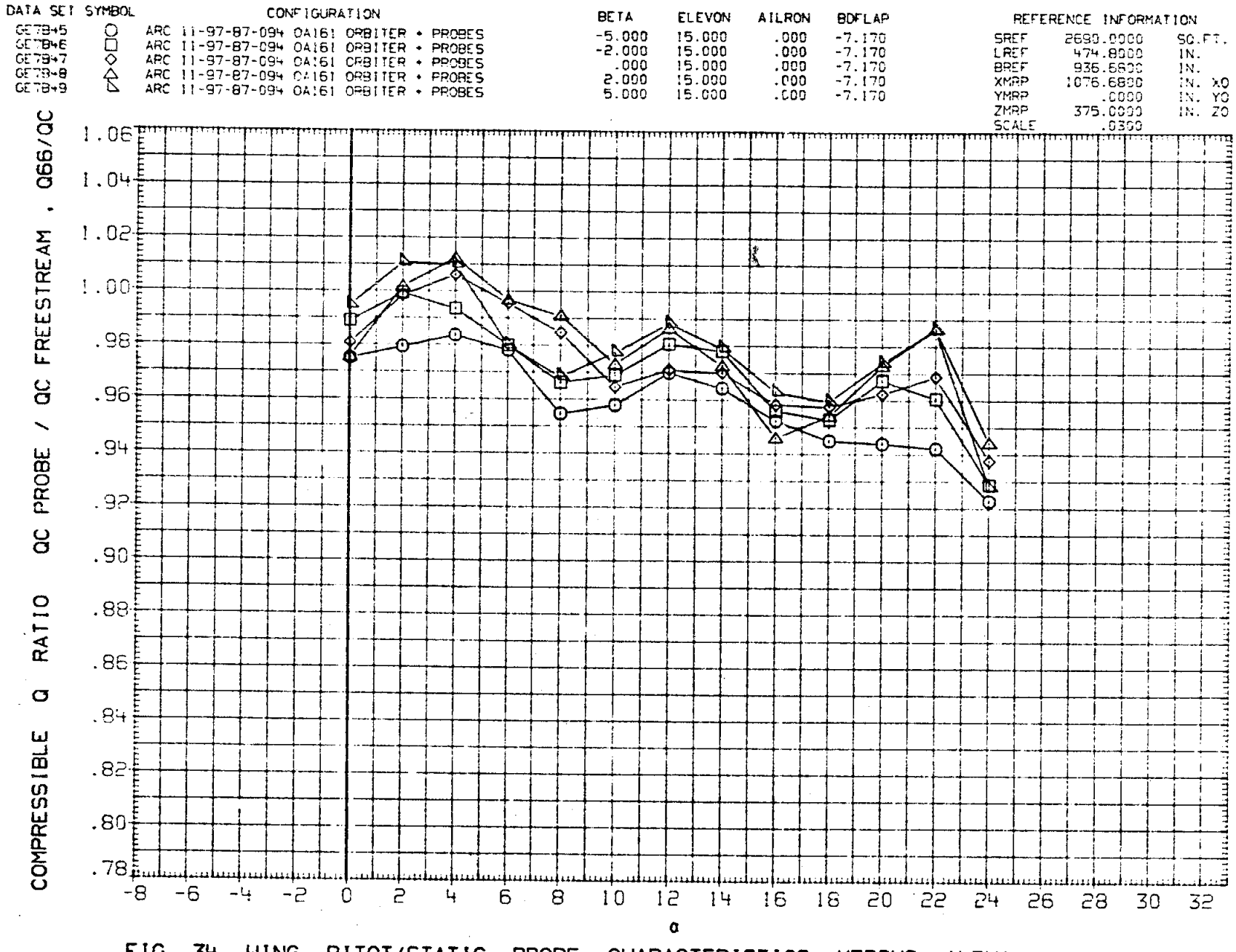


FIG. 34 WING PITOT/STATIC PROBE CHARACTERISTICS VERSUS ALPHA AT VARIOUS BETAS

(B)MACH = .60

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
GE7845	○	ARC 11-97-87-094 OA161 ORBITER + PROBES	-5.000	15.000	.000	-7.170
GE7846	□	ARC 11-97-87-094 OA161 ORBITER + PROBES	-2.000	15.000	.000	-7.170
GE7847	◇	ARC 11-97-87-094 OA161 ORBITER + PROBES	.000	15.000	.000	-7.170
GE7848	▷	ARC 11-97-87-094 OA161 ORBITER + PROBES	2.000	15.000	.000	-7.170
GE7849	▽	ARC 11-97-87-094 OA161 ORBITER + PROBES	5.000	15.000	.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

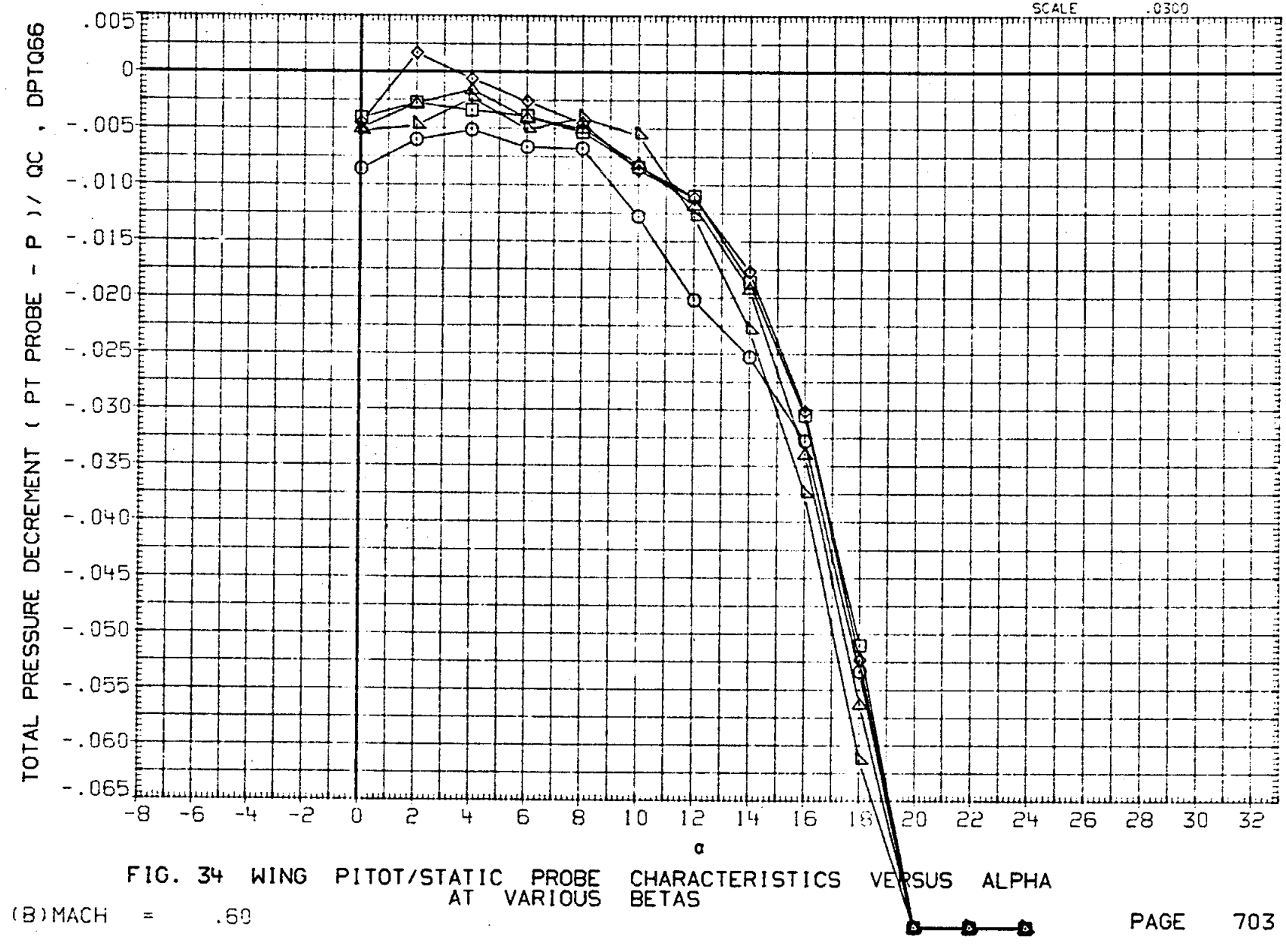


FIG. 34 WING PITOT/STATIC PROBE CHARACTERISTICS VERSUS ALPHA AT VARIOUS BETAS

(B)MACH = .60

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILERON	BODFLAP
GE7845	○	ARC 11-97-87-094 OA161 ORBITER + PROBES	-5.000	15.000	.000	-7.170
GE7846	□	ARC 11-97-87-094 OA161 ORBITER + PROBES	-2.000	15.000	.000	-7.170
GE7847	◇	ARC 11-97-87-094 OA161 ORBITER + PROBES	.000	15.000	.000	-7.170
GE7848	△	ARC 11-97-87-094 OA161 ORBITER + PROBES	2.000	15.000	.000	-7.170
GE7849	▽	ARC 11-97-87-094 OA161 ORBITER + PROBES	5.000	15.000	.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

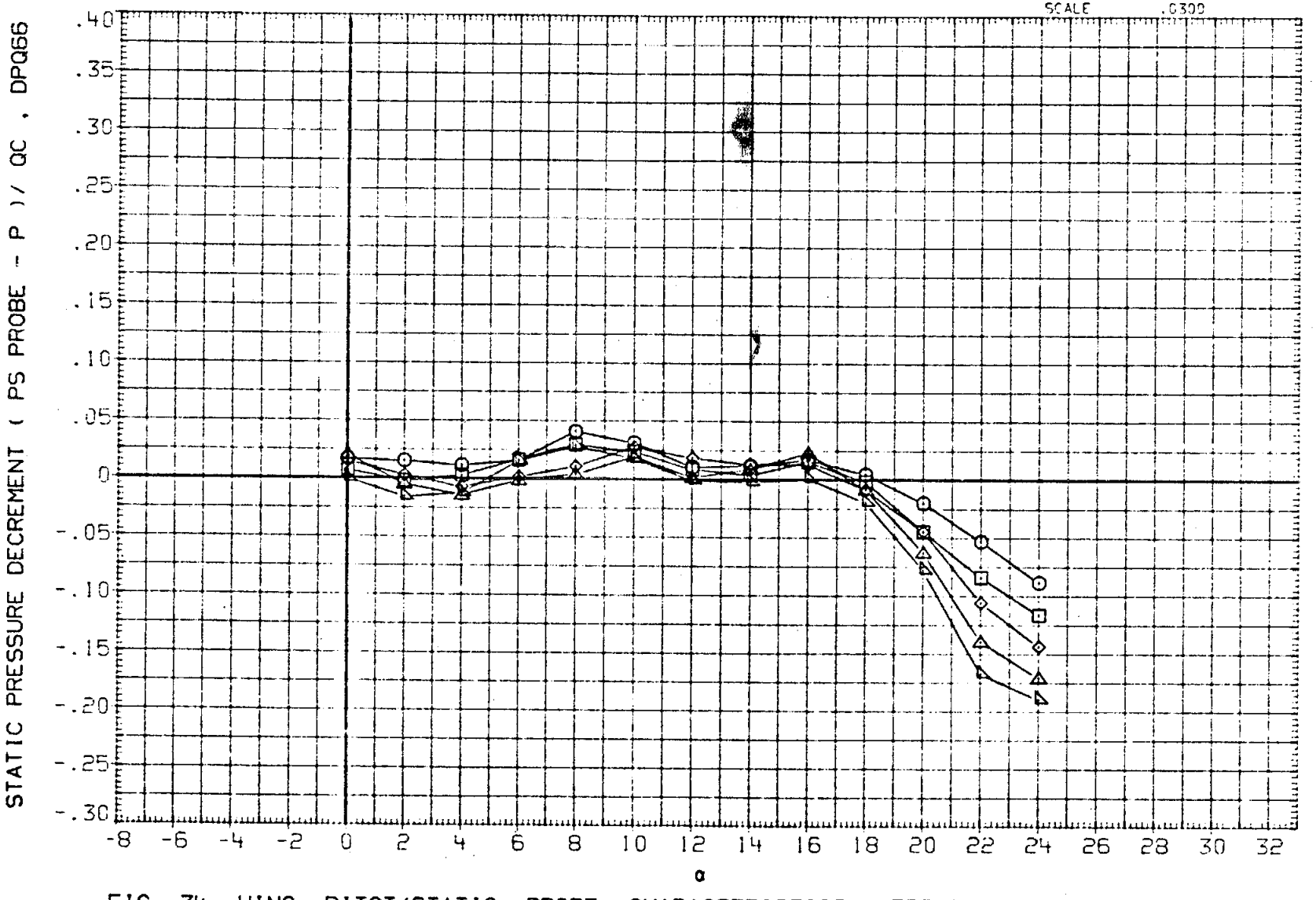


FIG. 34 WING PITOT/STATIC PROBE CHARACTERISTICS VERSUS ALPHA AT VARIOUS BETAS

(B)MACH = .60

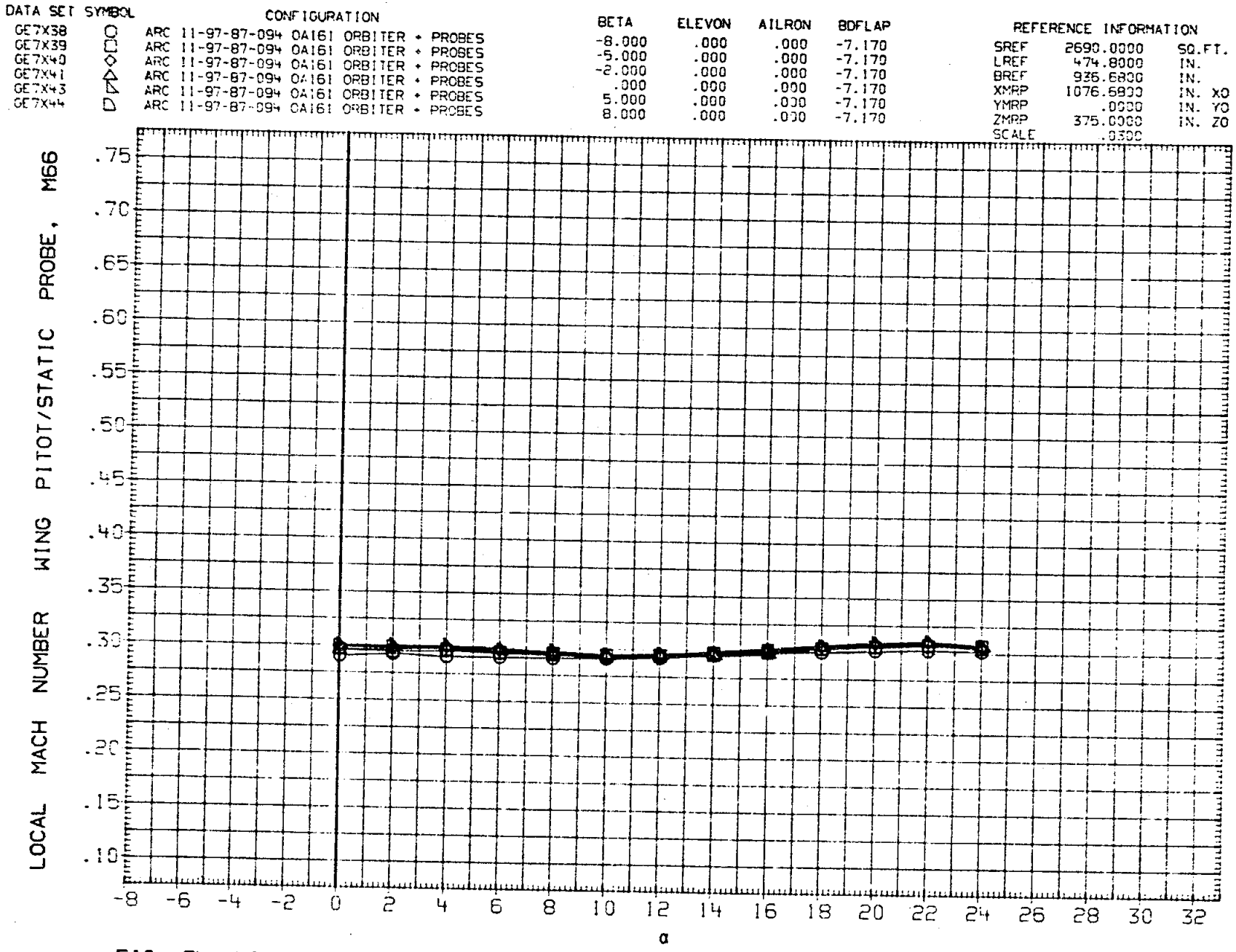


FIG. 34 WING PITOT/STATIC PROBE CHARACTERISTICS VERSUS ALPHA AT VARIOUS BETAS

(A)MACH = .30

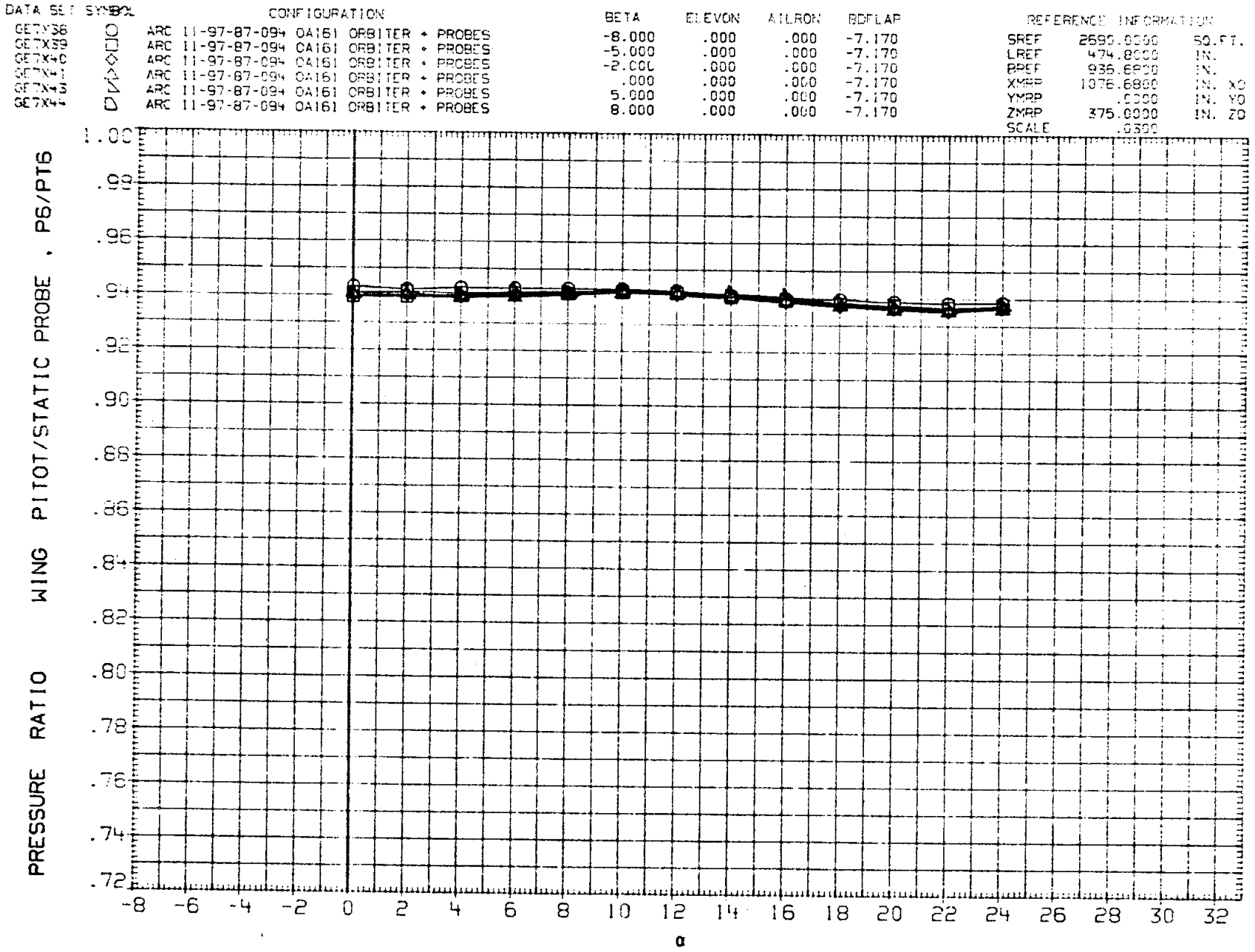


FIG. 34 WING PITOT/STATIC PROBE CHARACTERISTICS VERSUS ALPHA AT VARIOUS BETAS

(A)MACH = .30

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
GE7X38	○	ARC 11-97-87-094 OA161 ORBITER + PROBES	-8.000	.000	.000	-7.170
GE7X39	□	ARC 11-97-87-094 OA161 ORBITER + PROBES	-5.000	.000	.000	-7.170
GE7X40	◇	ARC 11-97-87-094 OA161 ORBITER + PROBES	-2.000	.000	.000	-7.170
GE7X41	△	ARC 11-97-87-094 OA161 ORBITER + PROBES	.000	.000	000	-7.170
GE7X43	▽	ARC 11-97-87-094 OA161 ORBITER + PROBES	5.000	.000	000	-7.170
GE7X44	▷	ARC 11-97-87-094 OA161 ORBITER + PROBES	8.000	.000	000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

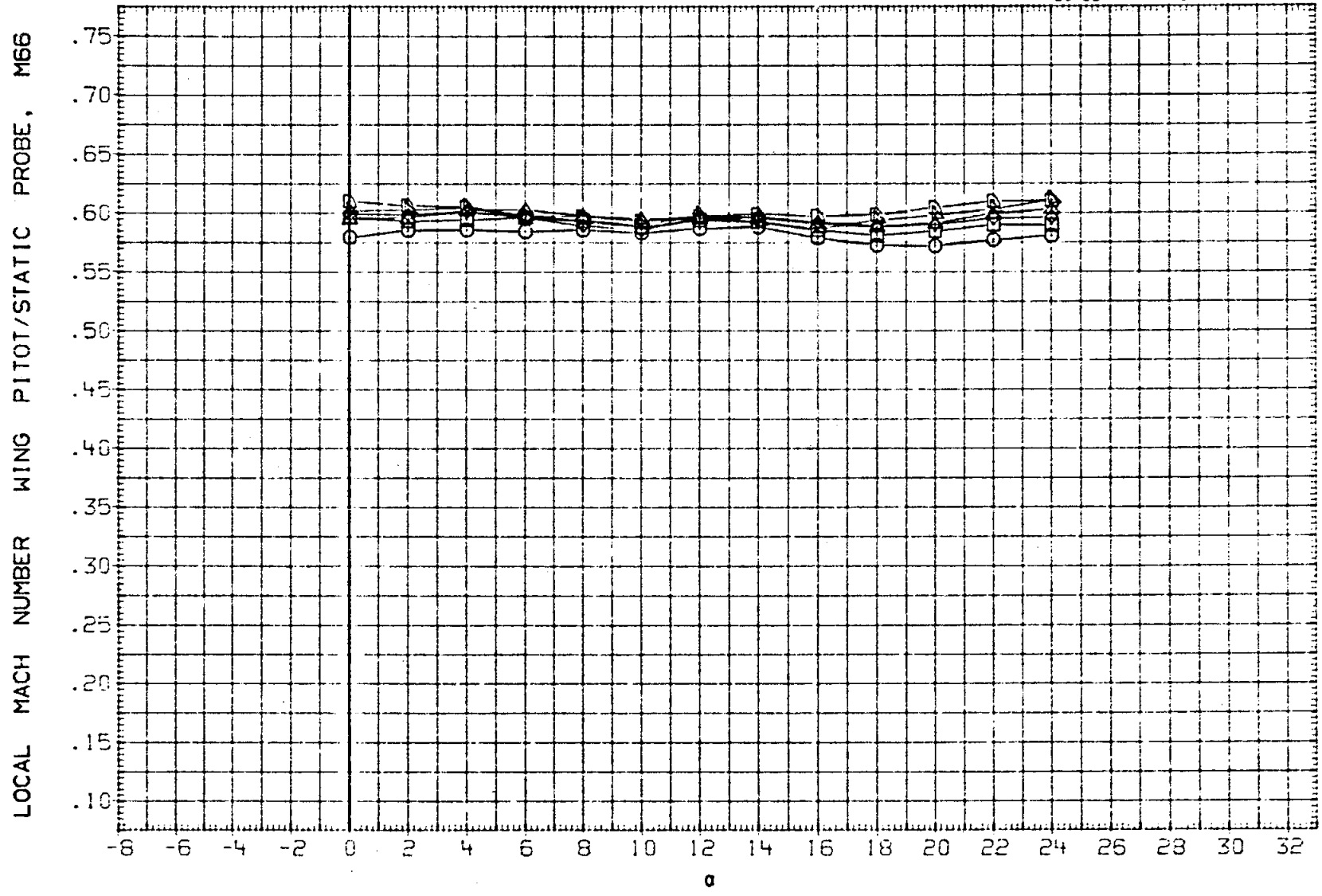


FIG. 34 WING PITOT/STATIC PROBE CHARACTERISTICS VERSUS ALPHA AT VARIOUS BETAS

(B)MACH = .60

DATA SET	SYMBOL	CONFIGURATION
GE7X38	○	ARC 11-97-87-094 OA161 ORBITER + PROBES
GE7X39	◇	ARC 11-97-87-094 OA161 ORBITER + PROBES
GE7X40	△	ARC 11-97-87-094 OA161 ORBITER + PROBES
GE7X41	□	ARC 11-97-87-094 OA161 ORBITER + PROBES
GE7X43	▽	ARC 11-97-87-094 OA161 ORBITER + PROBES
GE7X44	D	ARC 11-97-87-094 OA161 ORBITER + PROBES

BETA	ELEVON	AILRON	BDFLAP
-8.000	.000	.000	-7.170
-5.000	.000	.000	-7.170
-2.000	.000	.000	-7.170
.000	.000	.000	-7.170
5.000	.000	.000	-7.170
8.000	.000	.000	-7.170

REFERENCE INFORMATION

SREF	2690.0000	SQ.FT.
LREF	474.6000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

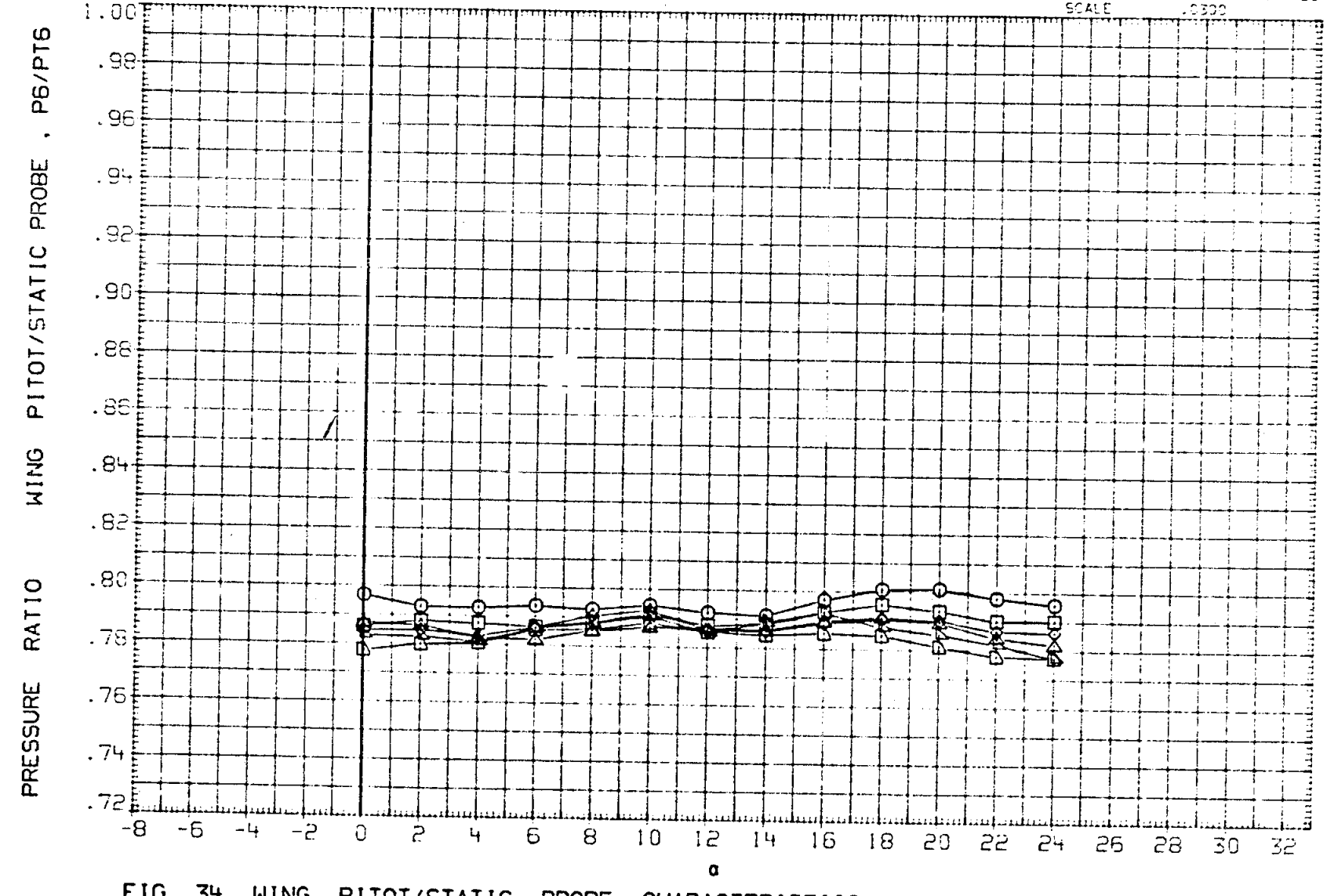


FIG. 34 WING PITOT/STATIC PROBE CHARACTERISTICS VERSUS ALPHA AT VARIOUS BETAS

(B)MACH = .60

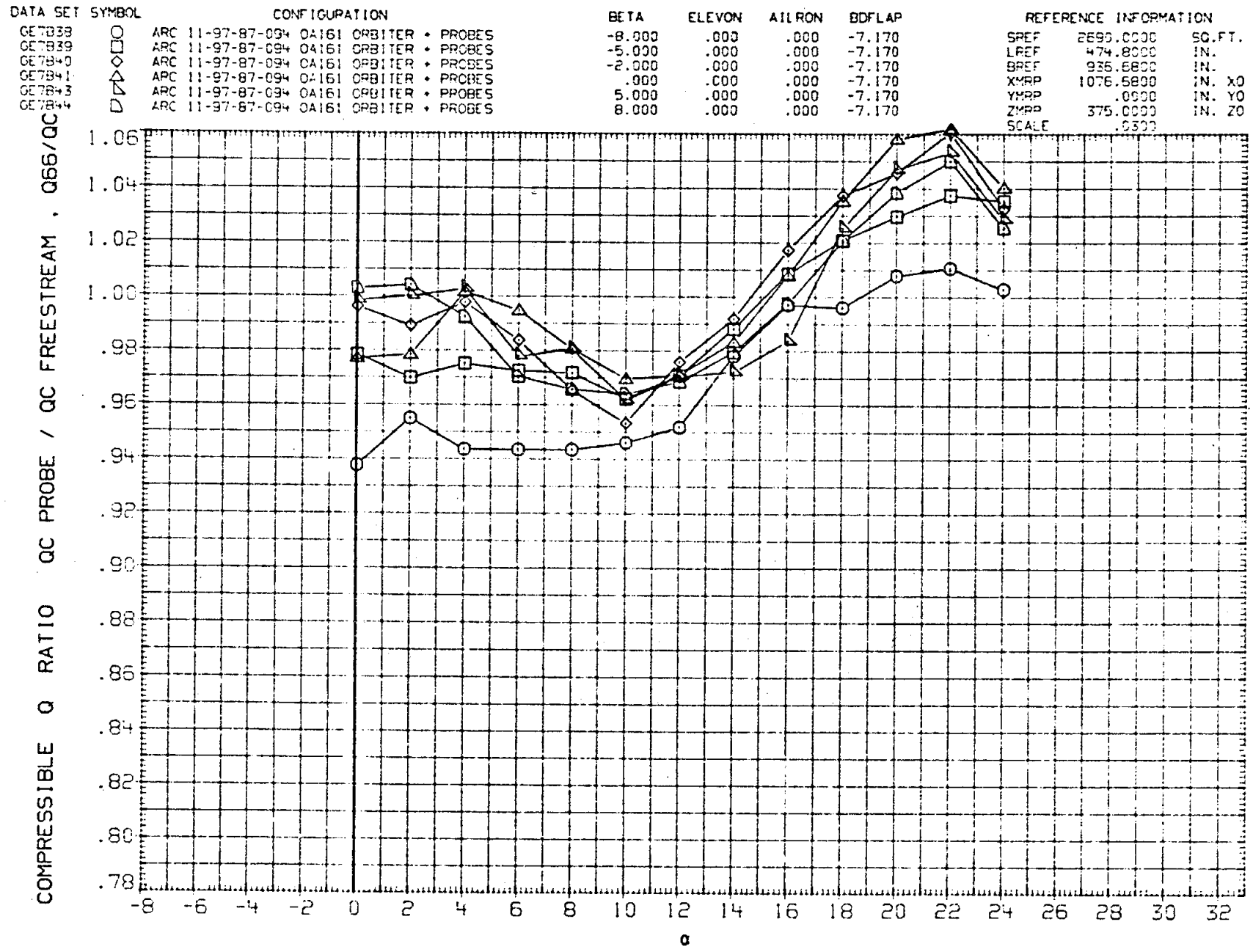


FIG. 34 WING PITOT/STATIC PROBE CHARACTERISTICS VERSUS ALPHA AT VARIOUS BETAS

(A)MACH = .30

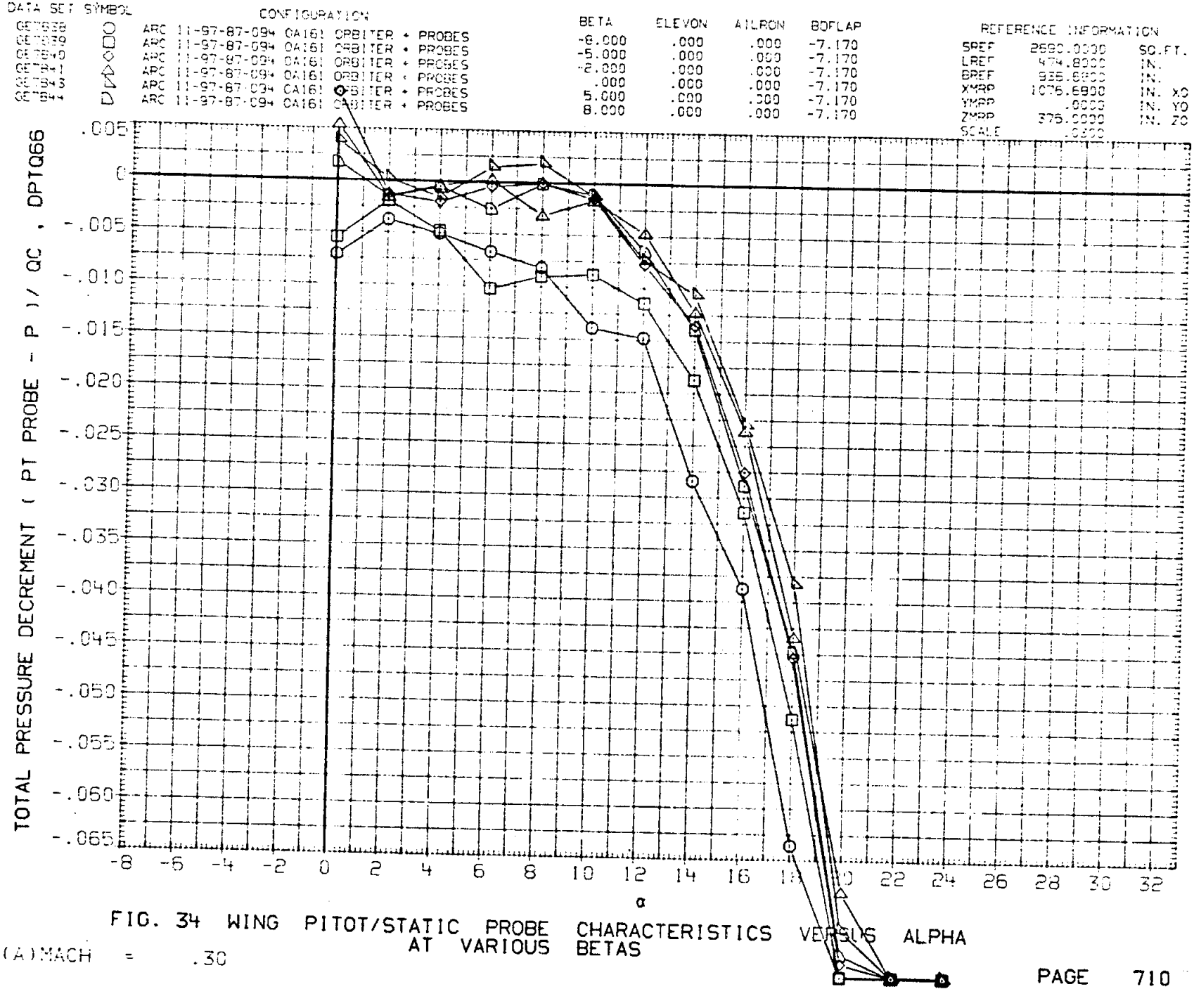


FIG. 34 WING PITOT/STATIC PROBE CHARACTERISTICS VERSUS ALPHA AT VARIOUS BETAS

(A) MACH = .30

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
067838	○	ARC 11-97-87-094 OA161 ORBITER + PROBES	-8.000	.000	.000	-7.170
067839	□	ARC 11-97-87-094 OA161 ORBITER + PROBES	-5.000	.000	.000	-7.170
067840	◇	ARC 11-97-87-094 OA161 ORBITER + PROBES	-2.000	.000	.000	-7.170
067841	△	ARC 11-97-87-094 OA161 ORBITER + PROBES	.000	.000	.000	-7.170
067843	▷	ARC 11-97-87-094 OA161 ORBITER + PROBES	5.000	.000	.000	-7.170
067844	▽	ARC 11-97-87-094 OA161 ORBITER + PROBES	8.000	.000	.000	-7.170

REFERENCE INFORMATION		
SREF	2690.0000	SQ.FT.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

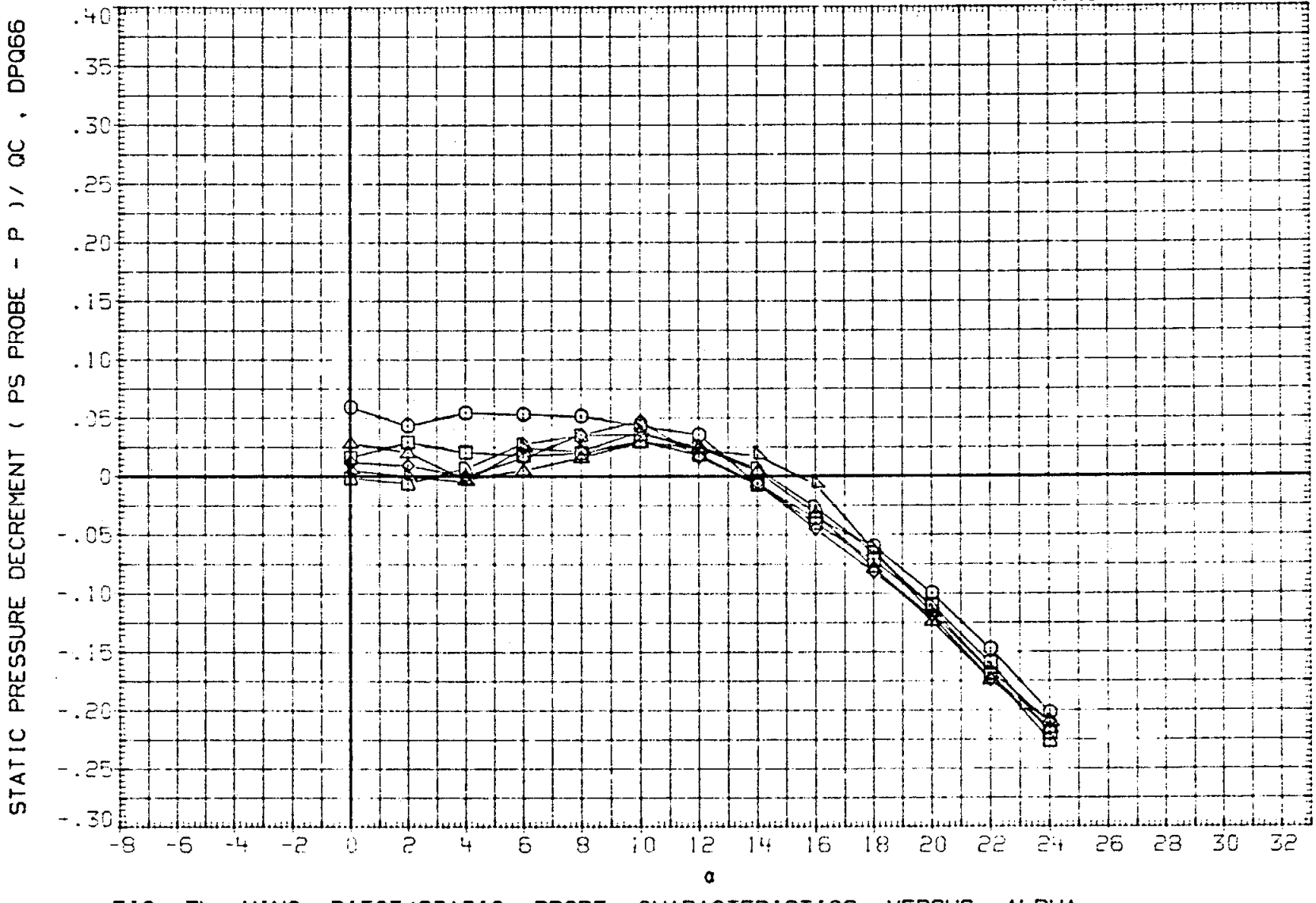


FIG. 34 WING PITOT/STATIC PROBE CHARACTERISTICS VERSUS ALPHA AT VARIOUS BETAS

(A)MACH = .30

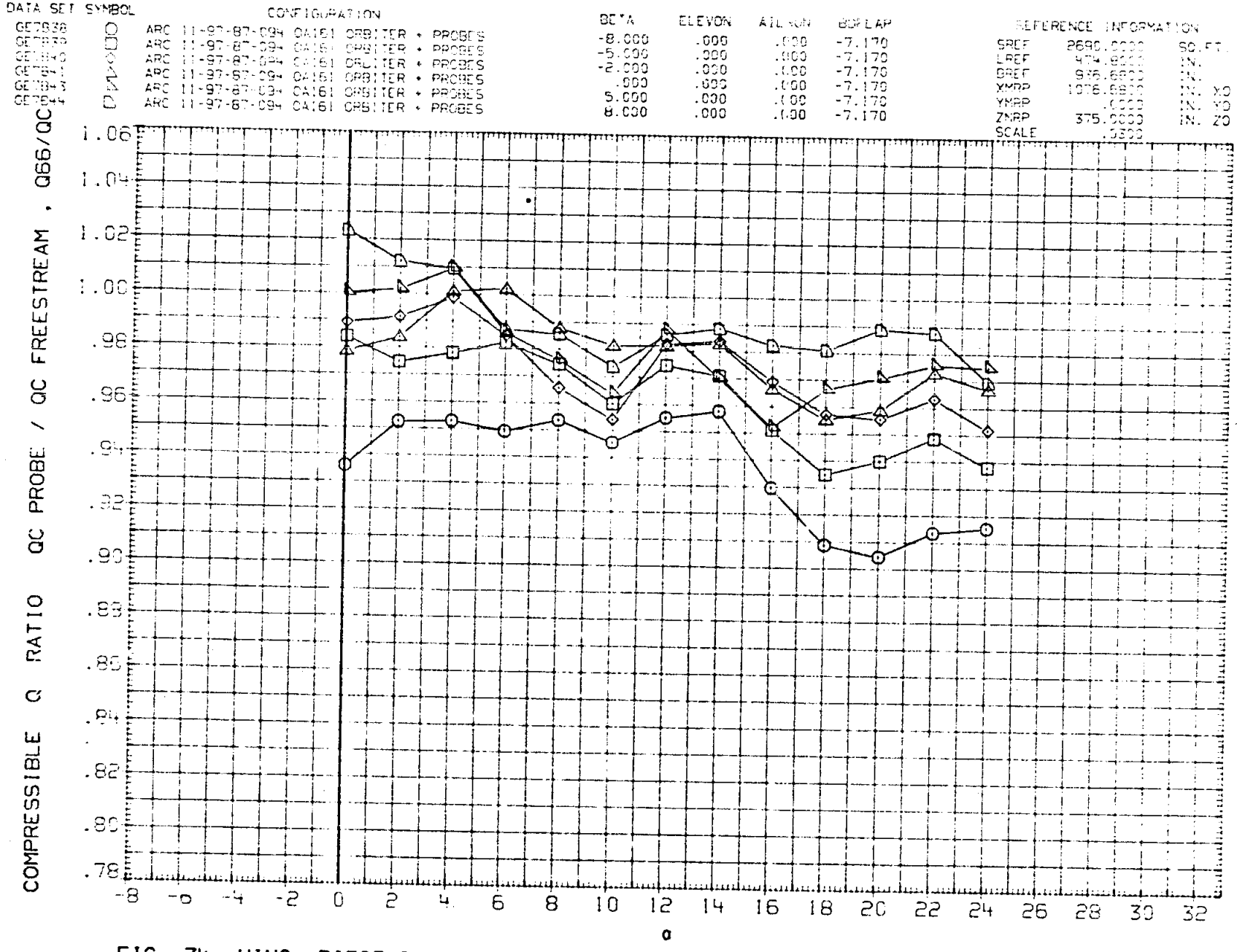


FIG. 34 WING PITOT/STATIC PROBE CHARACTERISTICS VERSUS ALPHA AT VARIOUS BETAS

(B)MACH = .60

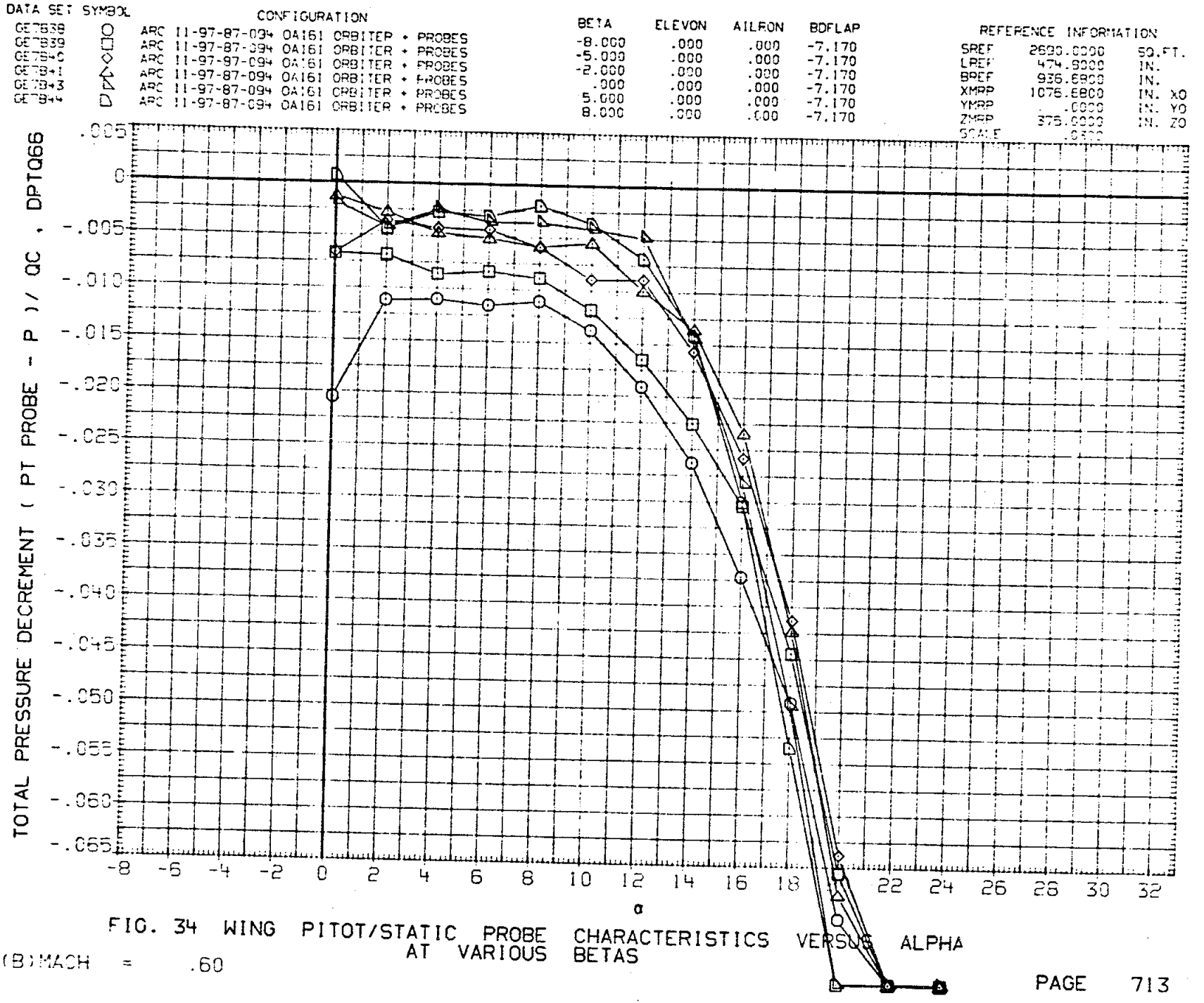


FIG. 34 WING PITOT/STATIC PROBE CHARACTERISTICS VERSUS ALPHA AT VARIOUS BETAS

(B)MACH = .60

DATA SET	SYMBOL	CONFIGURATION	BETA	ELEVON	AILRON	BDFLAP
0878838	○	ARC 11-97-87-094 OA161 ORBITER + PROBES	-8.000	.000	.000	-7.70
0878839	□	ARC 11-97-87-094 OA161 ORBITER + PROBES	-5.000	.000	.000	-7.70
0878840	◇	ARC 11-97-87-094 OA161 ORBITER + PROBES	-2.000	.000	.000	-7.70
0878841	△	ARC 11-97-87-094 OA161 ORBITER + PROBES	.000	.000	.000	-7.70
0878843	▽	ARC 11-97-87-094 OA161 ORBITER + PROBES	5.000	.000	.000	-7.70
0878844	▷	ARC 11-97-87-094 OA161 ORBITER + PROBES	8.000	.000	.000	-7.70

REFERENCE INFORMATION		
SREF	1690.0000	SQ.IN.
LREF	474.8000	IN.
BREF	936.6800	IN.
XMRP	1076.6800	IN. XO
YMRP	.0000	IN. YO
ZMRP	375.0000	IN. ZO
SCALE	.0300	

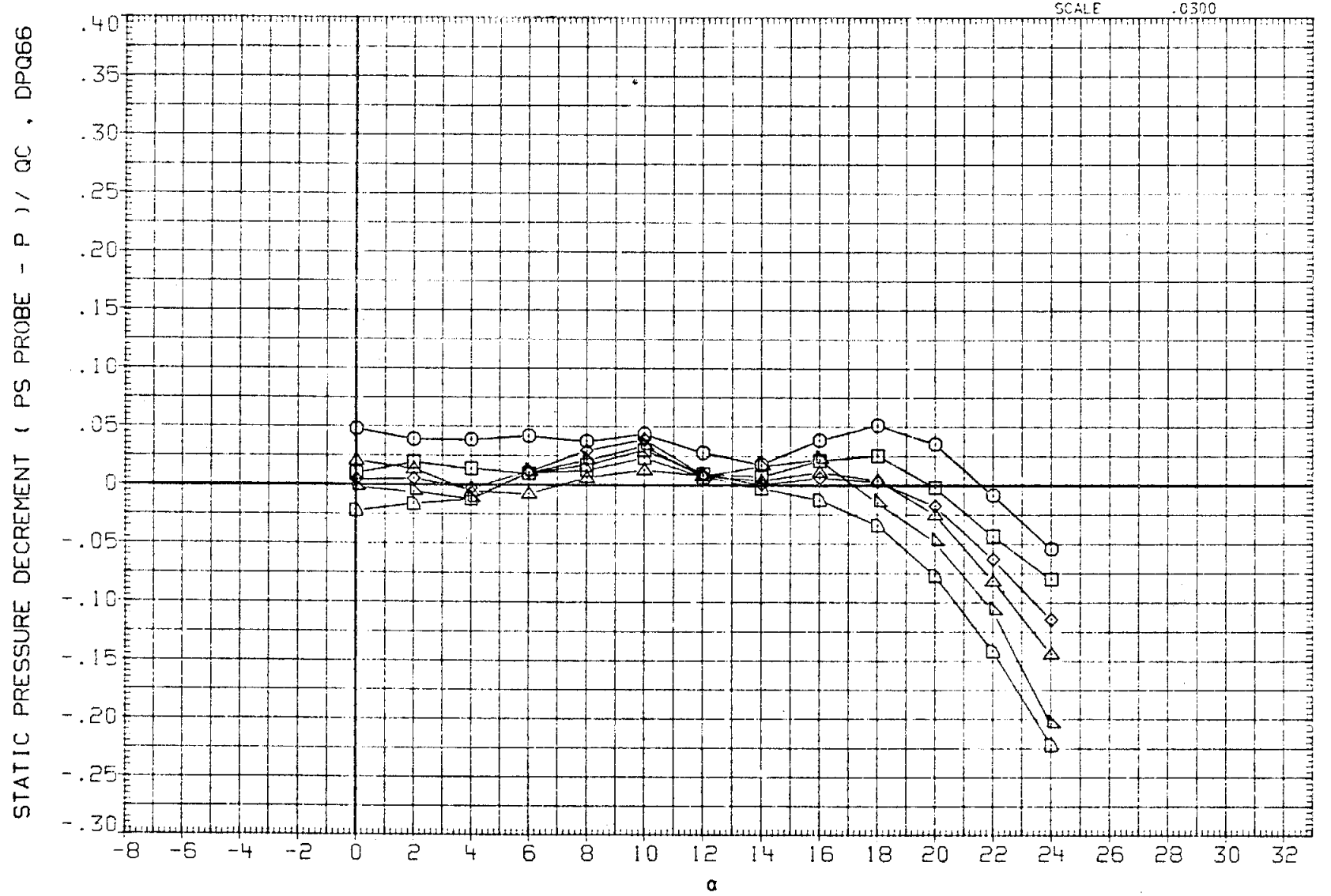


FIG. 34 WING PITOT/STATIC PROBE CHARACTERISTICS VERSUS ALPHA AT VARIOUS BETAS

(B)MACH = .60